

THE PHALACRIDAE (COLEOPTERA) OF AUSTRALIA AND NEW GUINEA

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Fig. 1-140.

THE family Phalacridae is abundantly represented in Australia and New Guinea, although comparatively few species have been recorded from the former country and not one from the latter. It has also not been recorded from Fiji or New Zealand. Major Brown apparently had no specimen of it from the latter country, and Mr. A. E. Brookes writes that it is unknown to him from there also, even *Phalacrus fimetarius* apparently not yet having been introduced.

In Masters' Catalogue only one species of the family, *Litochrus brunneus* Er., was recorded as Australian; a few records were made by Champion and Guillebeau, but most of the species were named by Blackburn, in the Transactions of the Royal Society of South Australia for 1891 (including notes on the family), 1892, 1893, 1895 (including notes on the family and a table of genera), 1899, 1902, and 1903. In Junk's Coleopterorum Catalogue, Part 108, A. Hetschko deals with the family from all parts of the world. Many additional localities and some synonymy can now be recorded, but the previous Australian records (all of Blackburn's are from the Transactions quoted) are as follows:

PHALACRUS Payk., Fauna Suec., III, 1800, p. 438; Cat., p. 4.

BURRUNDIENSIS Blackb., 1891, p. 101; Champ., Ent. Mo. Mag., LX, 1924, p. 237,
Ann. Mag. Nat. Hist. (9), xv, 1925, p. 39. N.A.

lineopunctatus Guilleb., Ann. Soc. Ent. Belg., xxxviii, 1894, p. 458; Cat.,
p. 5. India, Java, and Burmah.

FIMETARIUS F., Syst. Ent., 1775, p. 68. Europe, Africa, Asia.

coruscus Panz., Fauna Germ., 1797, No. 10; Blackb., 1891, p. 100. S.A., V,
(*corvinus* Guilleb., recorded by Champion, Ent. Mo. Mag., 1924, p. 237, as Aus-
tralian, was later, Ann. and Mag. Nat. Hist., 1925, xvi (9), p. 605, noted
as not Australian.)

(*uniformis* described by Blackburn as a *Litochrus* and removed to *Parascenus*,
was recorded by Champion, under the erroneous name of *unicolor*, as a
Phalacrus.)

- PHALACRINUS Blackb., 1891, p. 99, table, 1902, p. 298; Guilleb.,
Ann. Soc. Ent. Fr., 1895, Bull., p. xxvi; Cat., p. 12.
- AUSTRALIS Blackb., 1891, p. 99; Guilleb., *l.c.* S.A.
COMIS Blackb., 1895, p. 215, 1902, p. 298. V., T.
COMPRESSUS Blackb., 1902, p. 297. N.S.W.
NAVICULARIS Blackb., 1902, p. 298. V.
NOTABILIS Blackb., 1895, p. 214. Q.
var. *dilutior* Blackb., *l.c.*, p. 215. Q.
OBTUSUS Blackb., 1891, p. 100; Guilleb., *l.c.*: Champ., Ann. Mag. Nat. Hist., (9),
xv, 1925, p. 36, fig. 1, d.e. S.A.
ROTUNDUS Blackb., 1891, p. 100; Guilleb., *l.c.* S.A.
UMBRATUS Blackb., 1902, p. 297. N.S.W., W.A.
- LITOCHRUS Er., Naturg. Ins. Deutsch., 1845, p. 108; Blackb., tables, 1895,
p. 209, 1902, p. 294; Cat., p. 15.
- ALTERNANS Blackb., 1891, p. 95. V.
BACCAEFORMIS Blackb., 1902, p. 293. N.S.W.
BRUNNEUS Er. (*Phalacrus*), Wieg. Arch., 1842, p. 239; Blackb., 1891, p. 94,
1895, p. 206, 1902, p. 293; Guilleb., Ann. Soc. Ent. Fr., 1894, p. 295. T.
COLORATUS Blackb., 1895, p. 207, 1902, p. 293. Q.
CONSORS Blackb., 1893, p. 295. Q.
FRIGIDUS Blackb., 1891, p. 97. V.
KOEBELEI Blackb., 1895, p. 208. N.S.W.
LAETICULUS Blackb., 1891, p. 95. V.
LAUTUS Blackb., 1902, p. 290. N.S.W.
MACULATUS Blackb., 1891, p. 96. S.A.
MAJOR Blackb., 1891, p. 97, 1895, p. 208. S.A.
MARITIMUS Blackb., 1903, p. 111. V.
OBSCURICOLLIS Blackb., 1902, p. 292. N.S.W.
PALMERSTONI Blackb., 1891, p. 95. N.A.
PERPARVUS Blackb., 1902, p. 291. V.
PLAGIATUS Blackb., 1902, p. 289. N.S.W.
SPARSUS Blackb., 1902, p. 290. V.
SYDNEYENSIS Blackb., 1892, p. 26. N.S.W.
TINCTUS Blackb., 1895, p. 208. Q.

MEROBRACHIUS Guilleb., Ann. Soc. Ent. Fr., lxiv, 1895; Bull. p. xxvi;
Cat., p. 16.

AMABILIS Guilleb., *l.c.*, 1894, p. 296 (*Micromerus*); Blackb., 1902, p. 293.

Australia,

HETEROLITUS Guilleb., Ann. Soc. Ent. Fr., 1893, p. 275, 1894, p. 280;
Cat., p. 17.

THORACICUS Fleut., 1887, p. 61 (*Olibrus*), 1893, p. 376. India, etc.
var. *noteroides* Blackb. (*Litochrus*), 1895, p. 208, 1902, p. 293; Champ., Ent.
Mo. Mag., 1924, p. 239; Ann. Mag. Nat. Hist. (9), xv, 1925, p. 39, note.
N.A.
var. *pulchellus* Blackb. (*Litochrus*), 1895, p. 207, 1902, p. 293; Champ., Ent.
Mo. Mag., 1924, p. 239. Q.

PARASEMUS Guilleb., Ann. Soc. Ent. Fr., 1894, p. 281, 300; Blackb., 1895,
p. 210, table, p. 214, 1902, p. 295; Cat., p. 31.

ADUMBRATUS Blackb., 1902, p. 296.	N.S.W.
ALPICOLA Blackb., 1891, p. 98.	V.
COMES Blackb., 1895, p. 212.	Q.
DISCOIDEUS Blackb., 1895, p. 211.	Q.
DOCTUS Blackb., 1895, p. 212.	N.S.W.
GROUVELLEI Guilleb., Ann. Soc. Ent. Fr., 1894, p. 300.	Australia
INTERNATUS Blackb., 1895, p. 213.	S.A.
LATERALIS Blackb., 1891, p. 97.	S.A.
MITCHELLI Blackb., 1899, p. 24.	Q.
MODESTUS Blackb., 1895, p. 212.	Q.
OBSOLETUS Blackb., 1895, p. 213.	Q.
PALLIDUS Blackb., 1902, p. 297.	N.S.W.
SUTURELLUS Blackb., 1891, p. 96 (<i>Litochrus</i>).	W.A.
TORRIDUS Blackb., 1895, p. 211.	Q.
UNIFORMIS Blackb., 1891, p. 98.	S.A.
VICTORIENSIS Blackb., 1891, p. 101 (<i>Olibrus</i>), 1895, p. 211.	V.

Specimens of the family may commonly be taken in abundance by beating flowers and shrubs over an inverted umbrella. They may also be obtained from drying ferns, from moss, and occasionally by sieving fallen leaves; many specimens are also attracted to lights in the tropics.

The species of *Phalacrinus* may often be beaten into the umbrella in enormous numbers from drying branches of recently felled eucalyptus trees. Rust galls (*Uromycladium* spp.) often harbour large numbers of *Phalacrus fimetarius*. Being small, and seldom with distinctive markings, they are frequently passed over by collectors.

I examined all Blackburn's types, before sending them to the British

Museum, so was able to identify with certainty many of the species named by him; most of the species were also represented by cotypes and other authentic specimens in the South Australian Museum or in my own collection.

Blackburn did not use the tibiae in his generic table; had he done so he would no doubt have associated *Phalacrinus* with *Phalacrus*. The projection of the intercoxal process of the mesosternum varies according to the angles in which the coxae and femora are placed with it; on a specimen of *Litochrus longilarsis* the middle legs are level with the process, which scarcely projects beyond the coxae; on another specimen of the same species the legs are sloping at an angle of 45° , and the process appears to project considerably beyond them. I was unable to recognize with certainty *Merobruchys* and *Heterolitus*, which may be amongst the species referred by Blackburn and myself to *Litochrus*, but the other genera may be distinguished as follows:

- a. Hind tibiae with apical fringe only.
 - b. Scutellum much larger than in other genera PHALACRUS.
 - bb. Scutellum of normal size PHALACRINUS.
- aa. Hind tibiae with apical fringe and two long unequal spurs.
 - c. Basal joint of hind tarsi much longer than second LITOCRUS.
 - cc. Basal joint shorter than second PARASEMUS.

It is not always easy, however, to decide as to the relative proportions of the tarsal joints, even under a high power of the microscope.

The species are all small, and the generic characters are often difficult to see, examination under a compound power being always desirable and usually essential. The main features reside in the legs, especially in the hind tibiae and tarsi. With most species it is impossible to be sure of the genus, and even sometimes of the family, of specimens with legs and antennae concealed, the usual condition of specimens examined by myself before treatment; unless "set" when fresh, they are usually concealed under the body, so that in collections, specimens often placed with the family really belong to small Hydrophilidae (which differ in the antennae and palpi, and usually have more conspicuous punctures), Silphidae (*Anistoma* and similar genera), Nitidulidae (some of the smaller species with clytra completely covering the abdomen), Coccinellidae (small glabrous species), Chrysomelidae (minute species of *Paropsis*), and other families. Conversely specimens of the family may be placed with the other families named. Mr. F. E. Wilson has a large species of Corytophidae, which at first sight has a quite striking resemblance to members of the family, but has the head covered by the prothorax and the hind coxae widely separated.

All the species are polished, and many are brilliantly iridescent. The colour of the upper surface, apart from iridescence, is usually uniform, except that the

base of the prothorax, or at least its sides, is often paler than elsewhere; on many dark species the front of the head, the under surface, and legs are pale, and the antennae and palpi are usually entirely pale. Some species are conspicuously marked, but the markings are nearly always variable. All have the upper surface glabrous.

There are several species of the family that have the upper surface entirely pale, except that, in certain lights, the base of the prothorax, and elytra, and the suture of the latter appear very narrowly infuscated or black, forming a narrow T. At first glance, these species, except for size, are so close together that they might be considered as belonging to but one species, but some of them are sufficiently distinct. They are:

- Lilochrus koebeli* Blackb.
- L. noteroides* Blackb.
- L. lineatus* Blackb.
- Parasemus alpicola* Blackb.
- P. modestus* Blackb.
- P. pallidus* Blackb.

Varieties of the following species are also almost entirely pale:

- Lilochrus alternans* Blackb.
- L. braunens* Er. (as identified by Blackburn).
- L. laticulus* Blackb.
- Parasemus suturellus* Blackb.
- P. torridus* Blackb.

Of the new species *Lilochrus intactus* and *Parasemus pallens* are also almost entirely pale.

Evidently *Merobruchys amabilis* Guilleb. is also an almost entirely pale species.

Several species of *Phalacrinus*, either typical or varietal, are also almost entirely pale, but their outlines are so different from the other pale species that they should not be confused with them.

Many of the pale specimens appear to have quite well-defined rows of punctures, as seen from directly above, but when viewed from oblique direction the apparent punctures disappear, being really due to "waterlogging." Blackburn made no mention of this in his descriptions, and in some cases appears to have been misled by it.

Many species vary considerably in size. The outlines are more or less oval or oblong oval, with the elytra sometimes obtusely pointed; in the Australian

species at least there is never any abrupt increase in the base of the elytra compared with the base of the prothorax. The narrower species are generally more convex than the wider ones. On many species, viewed from the sides, the greatest height is shortly behind the scutellum, where it might be almost gibbous.

There is nearly always a distinct, but not complete, stria on each side of the suture; others, if present, are usually faint; or there may be rows of small punctures not set in striae. The interstices are often impunctate, and even when punctures are present they are mostly visible with difficulty. On several species minute oblique scratches may be seen in certain lights on the sides of the elytra. A slight amount of grease or dust usually obscures the sculpture, so I usually brushed the specimen with chloroform.

Champion wrote that the sexes are not usually distinct, but that "The males can generally be recognized by their stouter anterior tarsi or broader head, and in two species at least . . . by the elongated antennae"; also that the male sometimes has longer jaws, and in *Phal. marinus* a "densely punctured, transverse, pubescent pad along the centre of the apical margin of the second and third ventral segments." The sexes of the types, however, have seldom been noted; and as the jaws are usually clenched it is difficult to force them apart without damaging the head; the antennae also vary considerably in appearance according to how they are mounted on microscope slides, or examined dry, and the abdomens of specimens mounted in the ordinary way are usually so clogged with gum that it is difficult to clean them for examination.

It was not considered desirable to describe the relative lengths of joints of the antennae, as these vary to a certain extent sexually, and if examined dry they differ in appearance from various points of view; even when mounted in Canada balsam they vary in appearance.

At least one hind leg of each of the new species was mounted in Canada balsam and carefully examined under the microscope before the species was referred to its genus. In every instance, when referred to *Litochrus*, the first joint of the tarsis was longer, and usually much longer than the second; in every instance, when referred to *Parasemus*, the second joint was longer than the first. Each has an apical fringe of setae to the hind tibiae and (except in *Phalacrus* and *Phalacrinus*) two unequal spines.

If the hind tarsi are so mounted that the joints can be seen from the side the suture between the two basal joints, in *Parasemus* at least, is more distinct than if mounted so as to be seen directly from above or below. Usually two hind legs and two antennae of one specimen were mounted on a slide. With the highest power used it was not always easy to see the sutures between the joints, owing

to the density of the setae more or less obscuring them. Blackburn apparently examined detached parts loose, afterwards gumming them on cards with the specimens from which they were removed.

The sketches of the elytra are drawn from one side, so that the suture, instead of appearing as a straight line, appears as a curved one, thus allowing the full extent of the markings to be shown.

Owing to their polished surface, water gums will seldom hold specimens set on their backs, so it is desirable to use Canada balsam for them; even this is not always effective.

PHALACRUS INSIGNIS sp. nov.

Fig. 1-3.

Black, with a slight bluish gloss, median joints of antennae and tarsi obscurely diluted with red.

Head with minute punctures, becoming scarcely visible on prothorax. Each elytron with sutural stria distinct from apex to about basal third, and faintly traceable almost to base; with rows of small but fairly distinct punctures, alternated with less distinct ones, and becoming irregular on sides, where they are mixed with minute scratches; space about scutellum impunctate. Length, 3.5-4.2 mm.

Queensland: Cairns (E. Allen), Coruwallis Island (C. T. McNamara); North Australia: Bathurst and Melville Islands (G. F. Hill), Connexion Island and Groote Eylandt (N. B. Tindale).

Much larger than any species of the family previously recorded from Australia. The rows of punctures on the elytra are fairly distinct, but to see the lateral scratches a good light is necessary. The jaws of the male are long and, when not clenched, very prominent.

PHALACRUS FIMETARIUS F.

P. CORRUSCUS Panz.

In comparing the elytral puncturation of *P. corruscus* with that of *P. burruddiensis*, Blackburn wrote: 'In *corruscus* it is fine, close, and even, there being no striae (except the sutural one), and scarcely a trace of longitudinal arrangement in any part of the puncturation.' This agrees well with some English specimens that were in his collection, and others from South Australia and Victoria, but on many others from his collection a faint linear arrangement of punctures may be traced in certain lights, and these gradually increase in strength, until it is difficult to tell where *corruscus* ends and *burruddiensis* begins.

Some large specimens, from Tasmania, bear quite regular rows of, for the family, fairly strong punctures, and were labelled by Blackburn as *corruseus*: other specimens from New South Wales and South Australia agree closely with them.

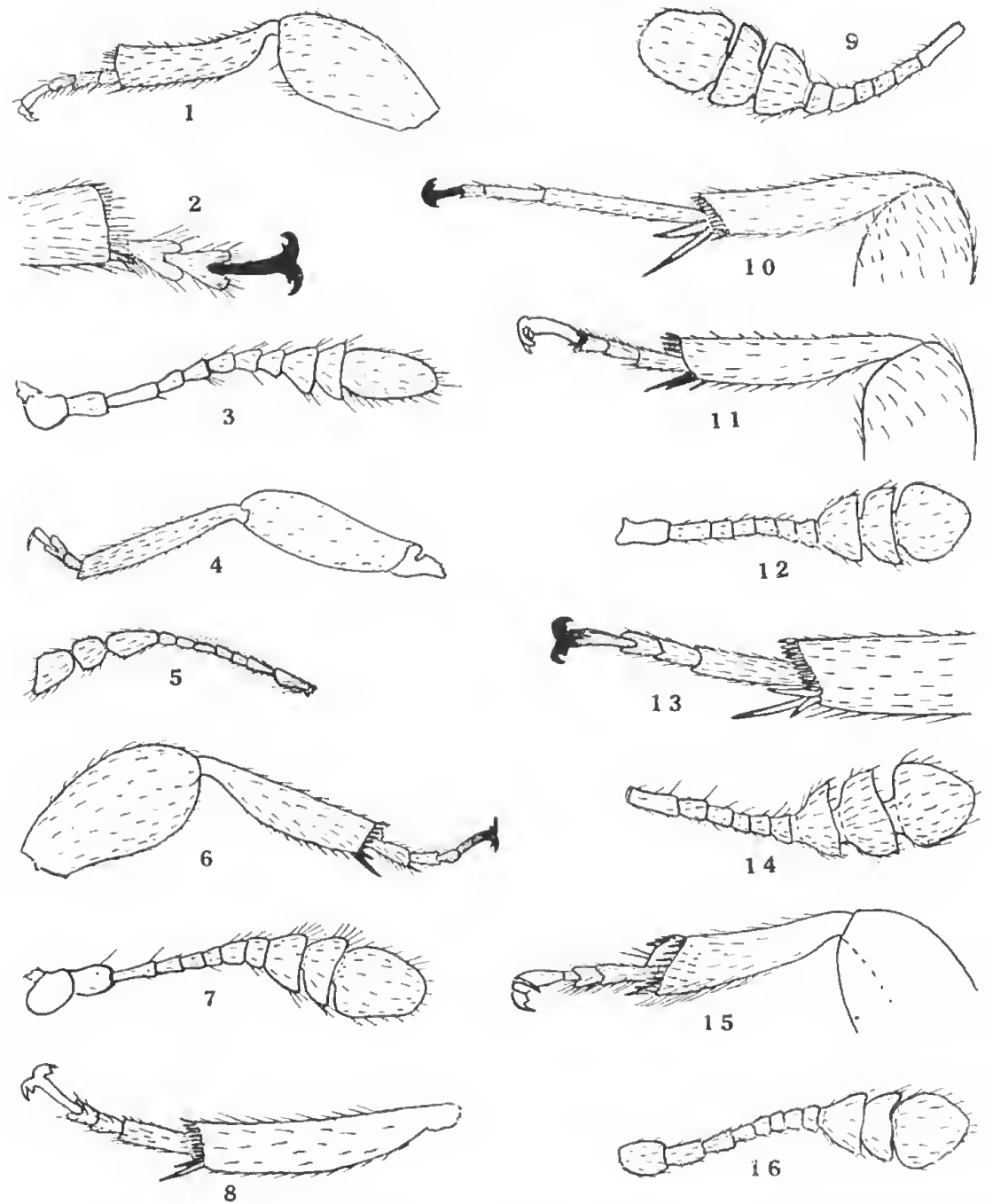


Fig. 1-16. 1, *Phalaenoptilus insignis* Lea, middle leg. 2, *ditto*, hind leg. 3, *ditto*, antenna. 4, *Phalaenoptilus nigriclavus* Lea, hind leg. 5, *ditto*, antenna. 6, *Lilochrus caeruleocinctus* Lea, hind leg. 7, *ditto*, antenna. 8, *L. pallidipes* Lea, hind leg. 9, *ditto*, antenna. 10, *L. longitarsis* Lea, hind leg. 11, *L. obscuripes* Lea, hind leg. 12, *ditto*, antenna. 13, *L. pallidicollis* Lea, hind leg. 14, *ditto*, antenna. 15, *L. parvoviger* Lea, hind leg. 16, *ditto*, antenna.

A specimen from Lucindale and two from Ulverstone have the legs, antennae, and upper lip reddish, but are probably immature. The species may commonly be taken in rust galls (*Uromygladium Tepperianum*), on wattle trees, as well as in general collecting; Mr. R. Veitch also sent specimens that were seen eating smut on prairie grass in Queensland.

Queensland: Brisbane, Cairns, Endeavour River, Ingham, Mabuiag Island, Magnetic Island, Peel Island, Rockhampton, Stradbroke Island; New South Wales: Armidale, Bindogundra, Blue Mountains, Cootamundra, Forest Reefs, Galston, Lawson, Mittagong, Sydney, Upper Williams River; Victoria: Alps, Baechns Marsh, Dividing Range, Ringwood; Tasmania: Devonport, Hobart, Huon River, Jordan River, Launceston, Ulverstone, West Tamar, Zeehan; South Australia: Adelaide, Barton, Carricie, Cook Plains, Henley, Hughes, Kangaroo Island, Kingoonya, Largs, Lucindale, Melrose, Minnie Downs, Mount Lofty, Oodnadatta, Port Lincoln, Port Noarlunga, Quorn, Tareoola; West Australia: Cue, Mount Barker, Pinjarrah; North Australia: Darwin, Connexion Island.

PHALACRYS BURRUNDIENSIS Blackb.

This species was described from a single specimen from North Australia, but in the Blackburn collection a specimen from Quorn was labelled as *burrundiensis*, and bears his number 3625 (the same number as the type). Of three specimens from Darwin, mounted on the same card, two have, for the genus, quite strong elytral striae, on the other they are rather feeble. Other specimens that are certainly *burrundiensis* have been taken in company with some which are certainly *finctarius*, and it is doubtful if the former should be regarded as more than a variety of the latter.

Queensland: Cairns, Moa Island, Rockhampton; New South Wales: Cootamundra; Tasmania: Launceston; South Australia: Ooldea, Port Lincoln, Port Noarlunga; North-West Australia: Fortescue River; North Australia: Darwin, Roper River.

PHALACRINUS.

Blackburn described the clypeus of species of this genus as being produced in front and concealing the labrum, but the clypeus itself is extremely short, and although the labrum is invisible from above, this is not due to the production of the clypeus. The species of the genus can be distinguished at a glance, from those of all other genera, occurring in Australia, by the elytra. On all others they have an even curvature throughout, except that the sides are very narrowly margined, but on *Phalacrinus*, towards the sides, the surface is slightly flattened out, with the extreme sides narrowly margined. As a result the elytra are dis-

finely wider in proportion. On putting the insects on their backs, it may also be seen that the sides of the prothorax and elytra are more produced than on other genera, so that the body parts appear to be in a deep cavity. Blackburn nowhere even mentioned the tibiae; under a high power these are seen to be fringed, but without longer apical spines; the genus is therefore near *Phalacrus*.

Mr. C. T. McNamara and I took a species of the genus in abundance from drying foliage at Singapore; it is about the size of Tasmanian examples of *P. comis*, and very much the colour, but as it may have been named under another genus, it seems desirable to record it here by the genus only.

PHALACRINUS NIGRICLAVUS sp. nov.

Fig. 4-5.

Bright castaneous, abdomen, palpi, and legs slightly paler; antennae, except basal third, deeply infuscated or black.

Head and prothorax with extremely minute punctures. Each elytron with sutural stria distinct to about basal fourth; with series of minute punctures, becoming stronger on sides. Length, 2·8-3·0 mm.

New South Wales: Upper Williams River (P. E. Wilson and A. M. Lea); Queensland: Mount Tambourine (Lea).

With the general outlines of most species of the genus, but with fewer striae on the elytra, and the series of punctures decidedly smaller than on all of them. The abdomen has a series of small shallow foveae, at the base of the second, third, and fourth segments; such foveae may be seen on other species of the genus, although not commented upon by Blackburn. The colour of the thirteen specimens examined is uniform, except that on two of them the elytra appear to be faintly bifuscate posteriorly, this being due to the dark wings showing through them. On several specimens, owing to 'waterlogging,' the sutural stria on each elytron appears traceable as a series of punctures to the base itself, but from oblique directions the stria is seen to terminate some distance from it. The two outer rows of punctures on each elytron, although minute, are distinctly stronger than the other rows, and about the shoulder curve inwards, and rather abruptly terminate; there are very fine punctures on the marginal interstices and apical half of the second one. The hind tarsi are rather short, the first joint is distinctly longer than the second, and, owing to the prolongation of its lateral lobes, its sides appear twice as long as its base.

Two specimens from the Blackburn collection, from North Queensland, may belong to the species; they are smaller, 2·3 mm., and more convex, but have similar elytral striae and punctures.

PHALACRINUS AUSTRALIS Blackb.

The extent of infuscation of the elytra of this species varies considerably, although the outlines of the infuscation are seldom sharply defined. Several specimens have finely infuscated lines on the inner parts of the elytra. The length ranges 2.0-2.5 mm. Specimens may be beaten from the drying leaves of recently felled eucalypti in large numbers.

New South Wales: Dalherton, Forest Reefs, Millthorpe, Sydney; Victoria: Eltham; South Australia: Kangaroo Island, Lucindale, Melrose, Morgan, Mount Lofty, Murray River, Ooldea.

PHALACRINUS ROTUNDUS Blackb.

As commented upon by Blackburn, this species is distinctly wider in proportion (more circular in outline) than *P. australis* and other species of the genus. The general colour is rather dingy flavous or testaceous, the elytra conspicuously infuscated towards the sides, but not at the extreme margins. The size ranges 2-3 mm.

Victoria: Sea Lake; South Australia: Mount Lofty, Port Lincoln; West Australia: Geraldton, Mount Barker, Swan River.

PHALACRINUS UMBRATUS Blackb.

Unsatisfactorily close to *P. australis* and *obtusus*, if these are really distinct. Specimens from Dalherton, the type locality, and Tamworth appear to agree with the common species in West Australia, many of which have a narrowly lined appearance, owing to the slight infuscation of the striae; on such specimens the lateral infuscation is more defined than usual.

New South Wales: Dalherton, Tamworth; West Australia: Beverley, Geraldton, Karridale, Mount Barker, Mullewa, Swan River.

PHALACRINUS NAVICULARIS Blackb.

The type of this species was unique and from Victoria, but three specimens from New South Wales were standing in the Blackburn collection under the name, and appeared to agree with the type; these specimens, and some others from New South Wales, have a more or less angular (usually triangular) pale spot behind the scutellum (by a slip Blackburn wrote behind the suture). On four of them the disc of the prothorax is infuscated, on three others it is uniformly pale. In his table of the genus Blackburn placed the species with those having "Elytra without any distinctly punctulate striae." The specimens from some directions appear to have no punctures in the striae, but from others fairly distinct ones may be seen, as on others of the genus.

New South Wales: Armidale, Glen Innes, Hastings River; Victoria: Dividing Range.

PHALACRINUS COMIS Blackb.

A large species, the average size being about equal to that of *P. notabilis*, from pale specimens of which it may be distinguished by the finer punctures of the elytral striae, especially on the sides.

New South Wales: Barrington Tops; Victoria: Dividing Range; Tasmania: Beaconsfield, Hobart, Huon River, Karoola, Launceston, Mount Wellington, Turner's Marsh, Tyenna.

LITOCHRUS CAERULEOTINCTUS sp. nov.

Fig. 6-7.

Black, elytra with a bright bluish iridescence.

Head with very minute punctures, becoming larger but still very minute on prothorax. Each elytron with sutural stria distinct to basal fourth and traceable almost to base; with rows of minute punctures, mostly vanishing about base, the interstices with very minute punctures, larger on sides than towards suture. Length, 2.0-2.8 mm.

New Guinea: Finsch Haven (Rev. L. Wagner); Papua: Mount Lamington (C. T. McNamara).

In general appearance much like *Parasemus fulgidus*, but with the tarsi of *Litochrus*. Ten specimens have the prothorax highly polished but not iridescent; of these eight have the elytral iridescence bluish, on the ninth it is more purplish; the tenth, and largest, specimen has the elytra more brilliantly iridescent, and its pronotum has a distinct greenish gloss. The second and several of the following joints of the antennae are not quite as black as the club. The clothing of the hind tarsi obscures their outlines, but under a high power the first joint is seen to be about twice as long as the second.

A specimen from Queensland (Dunk Island, C. L. Barrett) in Mr. F. E. Wilson's collection, appears to belong to this species, but is badly damaged.

LITOCHRUS PALPIDIPES sp. nov.

Fig. 8-9.

Black, elytra with a bright bluish iridescence; antennae, palpi and legs flavo-testaceous.

Head and prothorax with very minute punctures. Each elytron with sutural stria distinct on apical half, and faintly traceable to near base; with rows of minute punctures, becoming larger but still minute towards apex and sides, and

disappearing near base, the interstices with very minute punctures. Length, 2.4–2.6 mm.

New Guinea: Bisiatabu (Rev. W. N. Loek), Finsch Haven (Rev. L. Wagner); Papua: Mount Lamington (C. T. McNamara).

A brightly iridescent species, structurally close to the preceding, but slightly narrower, and with pale antennae, palpi, and legs. The punctures on the elytral interstices are very minute, towards the sides, in certain lights, they appear to be seriate in arrangement, although smaller than the regular rows. The basal joint of the hind tarsi is twice as long as the second.

LITOCHRUS LONGITARSIS sp. nov.

Fig. 10.

Black, elytra with a bluish iridescence; front of head, sides of prothorax and margins of elytra narrowly brown, under surface castaneous-brown, antennae, palpi, and legs somewhat paler.

Head and prothorax with scarcely visible punctures. Each elytron with sutural stria distinct to basal third and traceable for a short distance towards the base; with rows of minute punctures, disappearing towards base, but fairly sharply defined posteriorly, where also the interstices have very minute punctures. Length, 2 mm.

Papua: Mount Lamington (C. T. McNamara).

Structurally close to the preceding species, but margins and under surface pale, as well as the appendages; the basal joint of the hind tarsi is also longer, being thrice as long as the second. The pale margins of the elytra are sufficiently distinct on the apical half, but are extremely narrow on the basal half. On two of the specimens the prothorax is less dark than the elytra, and its base, as well as its sides, are somewhat brownish.

LITOCHRUS OBSCURIPES sp. nov.

Fig. 11-12.

Black, elytra usually with a slight bluish iridescence, antennae, palpi, tibiae, and tarsi of a rather dingy brown.

Head and prothorax with extremely minute punctures. Each elytron with sutural striae distinct to basal third, and traceable for a short distance towards the base; with series of minute punctures, fairly distinct posteriorly, but disappearing before base; interstices scarcely visibly punctate posteriorly and not at all elsewhere. Length, 1.5–1.9 mm.

New Guinea (P. Hossfeld); Papua: Mount Lamington, abundant (C. T. McNamara).

In general appearance like *L. caeruleotinctus* on a small scale, but less iridescent, and club of antennae not black, although infuscated. In general appearance also it is fairly close to the Australian *L. maritimus*. The femora are usually as dark as the under surface, but occasionally are no darker than the tibiae, the elytra are usually obscurely diluted with brown posteriorly, their punctures are fairly distinct in certain lights, but from most directions are invisible. The basal joint of the hind tarsi is much longer than the second.

LITOCIRUS PALLIDICOLLIS sp. nov.

Fig. 13-14.

Flavo-testaceous, antennae, palpi, and legs paler, elytra picous-brown and brightly iridescent.

Head and prothorax with extremely fine punctures. Each elytron with sutural stria distinct to basal third and traceable for a short distance nearer the base; with series of minute punctures, fairly distinct posteriorly, but not traceable to base, the interstices with very minute punctures posteriorly. Length, 2.2-2.5 mm.

New Guinea: Finsch Haven, to light (Rev. L. Wagner); Papua: Mount Lamington (C. T. McNamara).

To a certain extent resembling some specimens of *L. alternans*, but the prothorax distinctly paler than the elytra, and not paler at base. The abdomen is sometimes no darker than the legs, but sometimes is as dark as the metasternum, which is usually the darkest part of the under surface. The basal joint of the hind tarsi is much longer than the second.

LITOCIRUS PARVONIGER sp. nov.

Fig. 15-16.

Blackish, antennae, palpi, tibiae, and tarsi flavous.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria fairly distinct to about basal fourth; series of punctures scarcely traceable. Length, 1.4-1.6 mm.

New Guinea: Bisiatabu (Rev. W. N. Lock); Papua: Mount Lamington (C. T. McNamara).

A minute dark species, the club of the antennae not at all infuscated distinguishes from *L. obscuripes*; the femora are almost as dark as the under surface, which is not quite as dark as the upper surface. The basal joint of the hind tarsi is about twice the length of the second.

LITOCHRUS FUMATUS sp. nov.

Fig. 17.

Piceous-brown, antennae, palpi, and legs flavous.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria fairly distinct to basal third, and traceable for a short distance towards the base, series of punctures scarcely traceable even on apical half. Length, 1.4 mm.

New South Wales: Sydney (A. M. Lea).

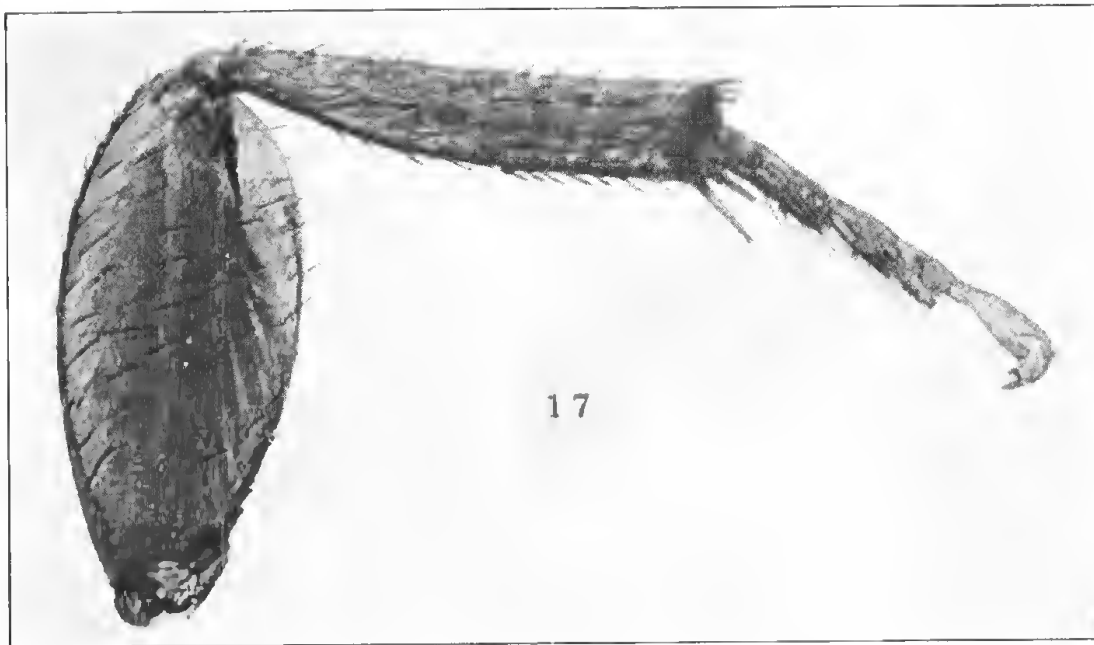


Fig. 17. *Litochrus fumatus* Lea, hind leg.

The size of *L. buccaeformis*, but slightly narrower and darker; also much like *Parascenus mitchelli* and *parvopallidus*, but with the hind tarsi of *Litochrus*, the basal joint being about twice the length of the second.

LITOCHRUS INTACTUS sp. nov.

Fig. 18-19.

Castaneo-flavous, antennae, palpi, and legs slightly paler.

Head and prothorax with scarcely visible punctures. Each elytron with sutural stria distinct to basal fourth, and traceable to base; with series of minute punctures, becoming fairly distinct posteriorly, the interstices with rather dense and still more distinct punctures, scarcely visible in scutellar region. Length, 2.0-2.2 mm.

Papua: Mount Lamington (C. T. McNamara).

In general appearance like pale enlarged *Parascenus pallens*, but with the hind tarsi of *Litochrus*, these being long and thin, with the first joint more than twice the length of the second. The general colour is much as that of *L. not-*

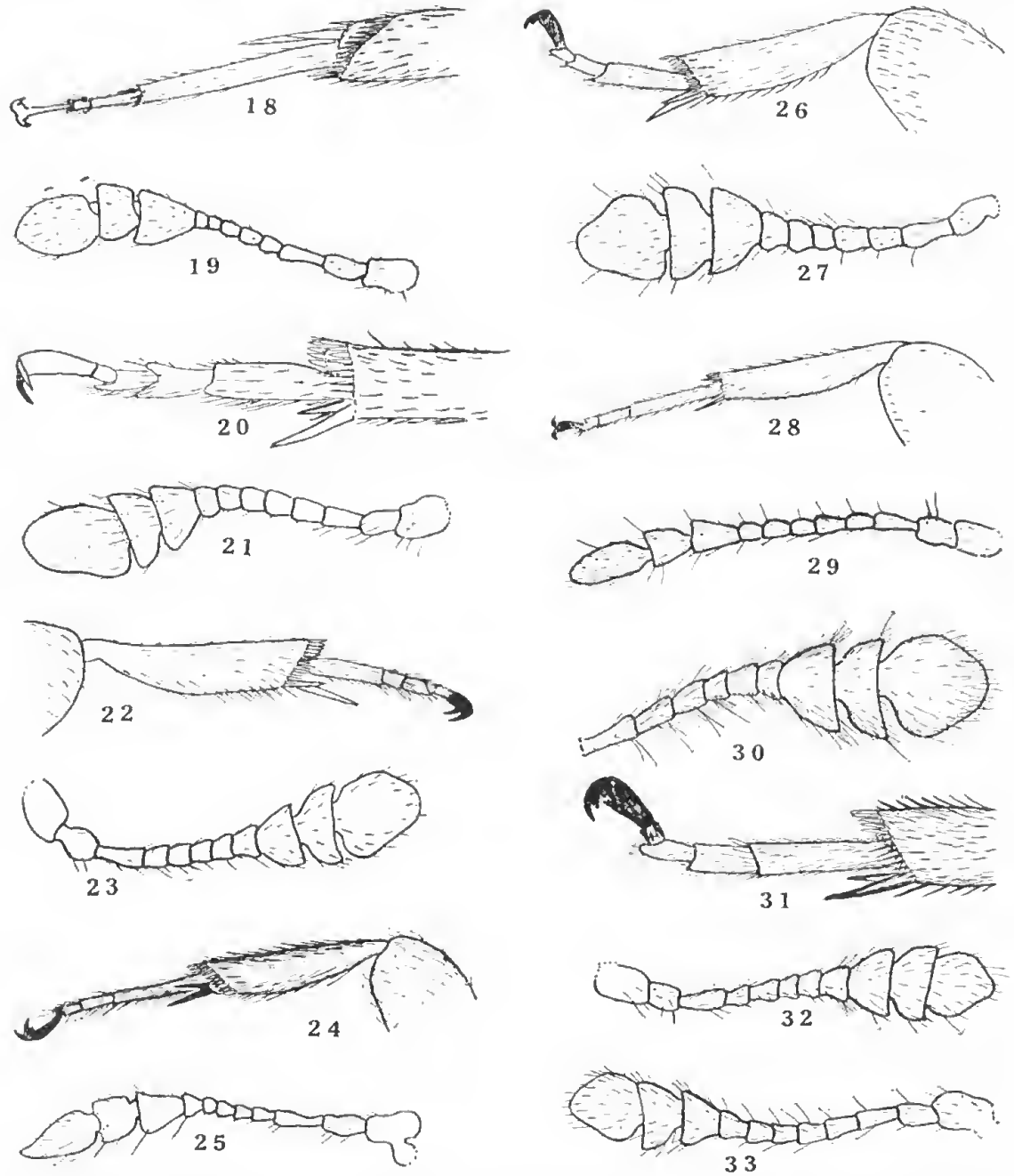


Fig. 18-33. 18, *Litochrus intactus* Lea, hind leg. 19, *ditto*, antenna. 20, *L. ruficollis* Lea, hind leg. 21, *L. blackburni* Lea, antenna. 22, *L. flavonotatus* Lea, hind leg. 23, *ditto*, antenna. 24, *L. r-niger* Lea, hind leg. 25, *ditto*, antenna. 26, *L. majorius* Lea, hind leg. 27, *ditto*, antenna. 28, *L. divergens* Lea, hind leg. 29, *ditto*, antenna. 30, *L. basipennis* Lea, antenna. 31, *ditto*, hind leg. 32, *L. apicifurcus* Lea, antenna. 33, *Parascenus fulgidus* Lea, antenna.

roides, but the elytra are distinctly less narrowed posteriorly. The elytra are very slightly paler than the prothorax, and on one specimen there are four faintly waterlogged lines on the left elytron and three on the right. In certain lights the elytral interstices are seen to be closely covered with very minute punctures, somewhat obscuring the regular series.

LITOCHEUS RUFICOLLIS sp. nov.

Fig. 20.

Head, prothorax, and scutellum bright red, under surface, antennae, palpi, and tarsi reddish-castaneous; elytra black with a slight bluish iridescence.

Head and prothorax with very minute but fairly sharp punctures. Each elytron with sutural stria distinct to basal fourth, and traceable to near base; with regular rows of small but distinct punctures, almost vanishing near base, the interstices with numerous very minute punctures. Length, 3 mm.

South Australia: Melrose (A. M. Lea). Unique.

A large, beautiful species, with well-defined rows of punctures on the elytra; the sutural stria from most directions appears to be a stria only, but in certain lights the part nearest the base is seen to be composed of narrow punctures; the adjacent row of punctures and parts of the others also appear to be striated, but in a good light, and from oblique directions are seen to be seriate punctures only. The basal joint of the hind tarsi is about twice the length of the second.

LITOCHEUS BLACKBURNI sp. nov.

Fig. 21, 66.

More or less bright castaneo-flavous, head black, the muzzle obscurely reddish, elytra black, with a brilliant bluish iridescence, and with two large, round, pale spots.

Head and prothorax with very minute punctures. Each elytron with sutural stria distinct on apical half only, but traceable almost to base; with rows of minute punctures, distinct only on apical half, the interstices with minute punctures. Length, 3.0–3.5 mm.

New Guinea (P. Hossfeld): Papua: Mount Lamington (C. T. McNameara).

The most beautiful species of the family that I have seen from any part of the world, and named with pleasure after the late Rev. T. Blackburn. The large spot on each elytron is situated at about the apical third, and is slightly nearer the suture than the side. The first joint of the hind tarsi is more than twice the length of the second.

LITOCIRUS FLAVONOTATUS sp. nov.

Fig. 22-23, 67-68.

Deep shining black, elytra with a bluish iridescence and with two flavous spots near apex, muzzle, hind angles of prothorax, and tip of abdomen obscurely brown, antennae, palpi, and legs flavous.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria fairly distinct to basal third, and traceable for a short distance towards the base, with a shorter and less distinct stria near the first; with rows of minute punctures, but not to base, the interstices with very minute punctures. Length, 2 mm.

New Guinea (P. Hossfeld); Papua: Mount Lamington (C. T. McNamara).

The spot on each elytron is very conspicuous and variable in size, but its margins are not very sharply defined, and are iridescent as well as the rest of the elytra. The spots are nearer the apex than on *Parasemus bimaculiflavus*. The elytral punctures are very minute, but in certain lights the rows are fairly distinct on the apical half. The basal joint of the hind tarsi is more than twice as long as the second.

LITOCIRUS V-NIGER sp. nov.

Fig. 24-25, 69.

Bright castaneo-flavous, abdomen, antennae, palpi, and legs slightly paler, elytra with a large black V, not quite touching shoulders, or suture at apical third.

Head and prothorax with scarcely visible punctures. Each elytron with sutural stria distinct to about basal fourth; with rows of minute punctures. Length, 2 mm.

Papua: Mount Lamington (C. T. McNamara).

Very distinct by the black V. The series of punctures on the elytra are fairly distinct on the apical half, but not traceable to the base, the interstices in some lights are seen to have minute punctures, which may also appear to be somewhat seriate in arrangement, but they are visible with difficulty. The hind tarsi are long and thin, the first joint more than twice as long as the second.

LITOCIRUS MAJORINUS sp. nov.

Fig. 26-27, 70-71.

Dark piceous-brown with a bluish iridescence, a large part of elytra, under surface, antennae, palpi, and legs flavo-castaneous.

Head and prothorax with minute but fairly sharp punctures. Each elytron

with sutural stria distinct to basal fourth and faintly traceable to near base, with rows of close-set punctures, fairly distinct on apical half, but almost vanishing towards base, the interstices with very minute punctures. Length, 3.0–3.2 mm.

Queensland: Dunk Island, in August (H. Hacker). Cairns district (F. P. Dodd).

A large species, with much of the elytra pale; the pale portion does not begin abruptly and cut square across, as on *L. lautus*, and the whole insect is longer, narrower, and more convex. On *L. plagiatus* the marking is not continued to the base or apex. The pale portion of the elytra commences at the scutellum, obliquely dilates to the basal fourth, is then narrowed to the apical fourth, and is then abruptly dilated to the sides; the base of the prothorax is narrowly pale. There is only one true stria on each elytron, but the punctures in the series are so close together that in certain lights they appear to form striae. The basal joint of the hind tarsi is more than twice as long as the second.

LITOCURUS DIVERGENS sp. nov.

Fig. 28-29, 72.

Blackish, a somewhat pear-shaped mark on elytra, under surface (metasternum darker than abdomen), antennae, palpi, and legs flavo-castaneous.

Head and prothorax scarcely visibly punctate. Each elytron with two striae near suture, and with faint rows of minute punctures, the interstices scarcely visibly punctate. Length, 2.8 mm.

Queensland: Cairns (E. Allen), Brisbane (A. M. Lea).

Readily distinguished from the other fairly large species with suture partly pale, by the two striae on each elytron; the first of these is very close to the suture, and in certain lights traceable to the base, the second commences with the first at the apex, and evenly diverges from it till at the basal fifth, where it practically terminates; it is about four times as distant from the first as the first is from the suture; it is supplied with minute punctures, although these are invisible from most directions. The mark on the elytra commences rather narrowly on the base, and dilates to its widest at the apical third, soon after which it terminates; the muzzle and the sides of the prothorax and of the elytra are narrowly paler than the adjacent parts. The basal joint of the hind tarsi is more than twice as long as the second.

LITOCURUS BASIPENNIS sp. nov.

Fig. 30-31, 73-76.

Head, prothorax, scutellum, and a narrow part of base of elytra suddenly dilated on shoulders, black or blackish; rest of elytra, part of antennae, palpi,

and legs flavous; under surface blackish-brown, abdomen usually somewhat paler than metasternum.

Head and prothorax with very minute punctures. Each elytron with sutural stria distinct to about basal fourth, and traceable almost to base; with rows of minute punctures, fairly distinct on apical half, the interstices with scarcely visible punctures. Length, 2.5-2.8 mm.

New South Wales: Dorrigo (W. Heron), Comboyne (W. H. Muldoon), Upper Williams River, in October (F. E. Wilson and A. M. Lea); Queensland: Buderim Mountain, in December (C. J. Wild, in Queensland Museum), Cairns district (Lea).

Five of the specimens have very distinctive elytral markings, on two others they appear to denote an approach to some forms of *L. lacteatus*. The black or blackish part of the elytra, on each of five specimens, occupies about one-fifth of the base, half-way to each side it is dilated at a right angle, and then cut off till near the side, along which (but not on the extreme margin, which is narrowly pale) it is narrowly continued for a short distance; on two other specimens the black portion of the base is subtriangularly continued for a short distance along the suture, and on one of them the shoulder marking is faintly connected with the suture beyond the middle. The muzzle and sides of the prothorax are obscurely pale. The elytra are faintly iridescent. On several specimens, from directly above, the elytra appear to have quite distinct rows of punctures, and a second stria on each, but this is due to "waterlogging"; from oblique directions the rows of punctures are seen to be very minute, and the apparent second stria resolves itself into a close-set row of minute punctures. The basal joint of the hind tarsi is more than twice as long as the second.

Two specimens, that may represent a variety of this species, have the dark parts of the upper surface of a rather dark brown, with the muzzle and sides of prothorax more widely pale, and the dark parts of the elytra consisting of a patch on each shoulder (ill-defined posteriorly) very narrowly connected across the base. The under surface is entirely pale.

LEPOCHELUS BINOTATUS sp. nov.

Fig. 77-78.

Blackish-brown, two spots on elytra, antennae (part of club infuscated), under surface, palpi, and legs flavo-castaneous.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria distinct to basal fourth, and traceable for a short distance towards base;

with rows of minute punctures, fairly distinct on apical half, the interstices with very minute punctures. Length, 1.8-2.0 mm.

Queensland: Hamilton, in January (C. J. Wild), Mount Tambourine, in January (A. M. Lea); New South Wales: Armidale (Lea).

The elytra are slightly iridescent; the spot on each is somewhat round, and, although distinct, its outer parts are not sharply defined; on the type it is at the basal third and isolated, on another specimen it is vaguely connected with the base, and on a third almost connected with it. To a certain extent the markings approach those of some forms of *L. lacteulus*, but it is shorter than that species, and more convex. In some lights the minute punctures, on parts of the elytral interstices, appear to be almost as seriate in arrangement as those in the regular series. The first joint of the hind tarsi is much longer than the second.

LITOCORUS APICIFLAVUS sp. nov.

Fig. 32, 79-81.

Black, elytra slightly iridescent, their apex, the antennae, palpi, and legs flavous; under surface dark brown, the abdomen usually paler.

Head and prothorax with very minute punctures. Each elytron with sutural stria fairly distinct to about the basal third; with rows of minute punctures, fairly distinct on apical half, and not traceable to base; the interstices with very minute punctures. Length, 1.9-2.1 mm.

North Australia: Roper River and Groote Eylandt (N. B. Tindale), Melville Island (W. D. Dodd), Darwin (G. F. Hill); North Queensland (Blackburn's collection), Port Douglas (C. J. Wild), Cairns (F. P. Dodd), Endeavour River (C. French, sen.), Stradbroke Island (J. H. Borcham and H. J. Carter), Bribie Island (H. Haeker and A. M. Lea), Brisbane (T. McGregor); New South Wales: Tweed River (Lea).

The pale tips of the elytra usually appear as two conjointed spots, which are sometimes almost white and usually sharply limited, but on two out of three specimens from the Tweed River they are more obscure. On many of the specimens each elytron is obscurely diluted with red at the basal third, but on only one is there a fairly distinct spot there (fig. 81). On two specimens the upper surface is of a rather dark brown only, probably from immaturity, with the apical markings less sharply defined. The muzzle is usually obscurely paler than the base of the head, the abdomen is sometimes scarcely darker than the legs. In some lights there appears to be a shorter second stria, and even a third one on each elytron, but this appearance is really due to close-set punctures, as may be seen from oblique directions. The first joint of the hind tarsi is twice as long as the second. The type is from Groote Eylandt.

LITOCHRUS BRUNNEUS Er.

Fig. 82-84.

In the original description of this species the colour was noted as "brunneus," and again "supra dilute brunneus . . . infra eum antennis pedibusque testaceus," and the length as 1 $\frac{1}{4}$ (German) lines about 3 mm.).

In dealing with the family in 1891, the species was evidently unknown to Blackburn; in 1895 he commented on "an example from Tasmania which I have no doubt is *Litochrus brunneus* Er.," and included it in a table; in 1902 he compared *L. perparvus* with "the Tasmanian *Litochrus* that I believe to be *brunneus* Er.," and again included it in a table.

The species he presumed to be *brunneus* was represented in his collection by several specimens bearing his name labels, and is a very common one in Tasmania. It may be obtained in general collecting, but also from ferns and mosses; on some ferns growing on a tree fern (*Dicksonia antarctica*) at Mount Wellington, on one occasion, I saw thousands of specimens. It differs, however, from the description in being consistently smaller (1.8-2.8 mm., the average being 2.2 mm.); the base and suture of the elytra are narrowly black, and there is a conspicuous infuscation (sometimes almost black) extending from each shoulder to the middle, or even sometimes to the apex, but it is sometimes very short; the base of the head is usually also infuscated. Three specimens from Tasmania have the upper surface entirely pale, flavous-brown, or flavous, and there are similar specimens from Sydney and Dorrigo before me; one Sydney specimen has a minute dark spot on each shoulder.

New South Wales: Dorrigo, Mittagong, Mount Kosciuszko, Sydney; Victoria: Warburton; Tasmania: Beaconsfield, Brunni Island, Cradle Mountains, Georgetown, Hobart, Huon River, Karoola, Kelso, Launceston, Mount Wellington (including the summit), St. Marys, Waratah, Wilmot.

LITOCHRUS ALTERNANS Blackb.

Queensland: Cairns, Goodna; New South Wales: Blue Mountains, Forest Reefs, Galston, Mittagong, Mount Victoria, Sydney, Wentworth Falls; Victoria: Alps, Bogong Plains (5,000-6000 feet), Healesville; Tasmania: Beaconsfield, Denison Gorge, Frankford, Hobart, Huon River, Karoola, Kelso, Launceston, Marrawah, Mount Wellington, Flyerstone; South Australia: Kangaroo Island, Lucindale, Mount Lofty, Minnipa.

The punctures on the prothorax of this species are all minute and visible with difficulty, although in the original description it is stated that it had "a few scattered punctures evidently much larger"; the elytra were also stated to have

“a conspicuous row of considerably larger and widely scattered punctures.” The colour was noted as “supra lividus, hic illi infuscatus, coeruleo iridescens, antennis palpis, pedibus et corpore subtus testaceis.”

It was named originally from the alpine district of Victoria, and there was a long series of specimens (including cotypes) standing under the name in the Blackburn collection from Victoria and Tasmania, but it occurs also in other parts of Australia. Whilst not mentioned in the original description, the base and sides of the prothorax are narrowly paler than the disc, although sometimes the difference in shade is but slight.

The size varies from 2.5 to 3.3 mm., the average being about 3.0 mm.

All the specimens have a bright (although hardly brilliant) bluish iridescence.

Of a pair taken *in cop.* on Mount Wellington, one specimen is almost black, with the paler base and sides of the prothorax very narrow; the other specimen is a bright castaneous, with the disc not at all infuscated. A smaller pair from Hobart, also taken *in cop.*, are almost uniformly moderately brown on the upper surface, with the paler base and sides of the prothorax fairly distinct.

Some of the smaller and paler forms, both from the mainland and Tasmania, are very close in appearance to *brunneus* (as identified by Blackburn, but differ in being distinctly iridescent and by having no dark vitta from each shoulder.

I think it is possible that it is the real *brunneus* of Erichson.

One bright castaneous specimen from Mount Wellington has the pronotum lightly infuscated in the middle and each elytron with a large postmedian infuscation, but in addition each elytron has six infuscated lines interrupted at the basal fourth, having a “waterlogged” appearance, as on many specimens of *Cordus hospes*. The lines are probably post-mortem.

The striations and punctures on the elytra are more distinct on some specimens than on others, which, nevertheless, are identical in colour.

LITOCHEILUS RIGERUS Blackb.

I cannot see the slightest structural difference between some cotypes and many other specimens of this species and specimens identified by Blackburn as *brunneus*. In his table Blackburn separates them by the rows of punctures on the alternate interstices of the elytra, but the punctures (X on the apical slope of the elytra) are distinct only in the rows. There are minute punctures elsewhere on the elytra, but (at least from the base to slightly beyond the middle) they are quite as variable on Tasmanian specimens (with the infuscated markings of typical *brunneus*) as on the entirely pallid Queensland and Northern

Australian forms of *lineatus*, and they are never sharply defined, although more distinct in some lights than in others.

On several specimens (owing to "waterlogging") there appear to be fairly strong rows of punctures or short infuscated lines on the elytra, as noted on other species of the genus, but viewing these from the sides, the apparent punctures disappear, although not the infuscations.

In the original description the elytra were noted as having "basis versus indeterminate lineis macularibus fuscis notatis." and several of the cotypes are so marked, but the markings are due to "waterlogging," and are mostly post-mortem. They agree absolutely in structure with other specimens from Cairns in which the elytra are entirely without markings or have only slight humeral ones. Blackburn (1) appeared to think the markings and larger size distinguished the species from *Micromerus amabilis* Guillebeau, but many specimens before me are much smaller (down to 1.5 mm. smaller than the cotypes), and I think it probable that it is really that species (now referred to *Microbrachys*).

Most of the specimens from Queensland and Northern Australia have a small and faint infuscation on each shoulder, but even this is often absent. Length, 1.5-2.5 mm.

Specimens that have been in spirits, and dried with the wings stuck to the under surface of the elytra, often have a spotted appearance and the "waterlogging" is patchy.

Most specimens have a very narrow T mark due to the slight infuscation of the base of prothorax and elytra, and the suture.

Queensland: Brisbane, Cairns, Darnley Island, Dunk Island, Kuranda, Moa Island, Murray Island, Mount Tamborine, Palm Island, Stewart River; Northern Australia: Darwin, Groote Eylandt, Melville Island; New South Wales: Galston.

Many specimens are attracted to lights.

Several specimens have faint lateral infuscations on the elytra, and one has the elytra with rather wide marginal and sutural infuscations.

Two Darwin specimens are labelled as having been taken on flowers of *Jasminum*.

LITOCURUS KOEBELI Blackb.

Except for its positions in the two tables given by Blackburn of *Lilochrus*, this species was not commented upon by him subsequent to its description, when it was noted as "testaceous" and "the uniform testaceous colour." When examining the type prior to its despatch to the British Museum I noted (in MS.): "The

(1) Blackburn, *Trans. Roy. Soc., S. Austr.*, xix, 1895, p. 208, and xxvi, 1902, p. 293.

type of *koebeli* looks much like the type of *lineatus*, and is probably the same species. Two specimens marked cotypes in the Blackburn collection are considerably larger, darker, and not uniformly coloured. I think they do not belong to the species." The type of *koebeli* also agreed with a specimen in my own collection (from the Blue Mountains, as was the type), which agrees with some specimens of the species identified by Blackburn as *L. brunneus* of Erichson. The specimens, wrongly marked as cotypes, are from Werris Creek, and are quite ordinary *P. victoriensis*.

LITOCHRUS NOTEROIDES Blackb.

Some cotypes and other specimens of this species agree quite well in colour with many of *L. lineatus*, but may be distinguished by the elytra more narrowed posteriorly. As with many specimens of *lineatus* and other pale species, the extreme base of the prothorax and elytra and the suture are infuscated, and appear as a very narrow 'I'. It was noted as a variety of *Heterolitus thoracicus* (an Asiatic species) by Champion.

Queensland: Cairns, Dalrymple Island.

LITOCHRUS PULCHELLUS Blackb.

Fig. 85-87.

There are before me five specimens belonging to this form, of which four, from the Blackburn collection, are marked as cotypes. Of these two have the prothorax deeply infuscated, except at the sides, and two have it uniformly pale. Their pale elytral markings consist of a large median spot common to both, the apex and sides; on the fifth specimen, from Innisfail, the median spot is dilated, considerably reducing the black area. It was also recorded as a variety of *H. thoracicus* by Champion.

Queensland: Cairns, Innisfail.

LITOCHRUS LAETICULUS Blackb.

Fig. 88-102.

Var. *L. consors* Blackb.

Fig. 103-104.

A common, widely distributed, and very variable species. Blackburn considered that *L. consors* was distinct from it by its smaller size, elytral striation and markings; but the size of both forms varies from 1.5 to 2.2 mm. The real and apparent series of punctures also vary, being more noticeable on the dark forms than on the light ones, except when "waterlogging" occurs. There

were no specimens from Victoria in Blackburn's collection, but two from South Australia bear his label as *lacticulus*, and there are four cotypes of *consors* and other specimens labelled by him as that species. On the dark forms the pale markings tend to vanish, and on the pale side the only markings sometimes left are slight darkenings about the scutellum. It is in fact probable that some specimens with entirely dark elytra, and others with entirely pale ones, belong to the species, and are standing in collections under other names. The patterns given will show the great range of variation of the elytral markings and many more could have been given. In the variety *consors*, from Queensland and North Australia, the size is usually smaller than typical specimens from South Australia and New South Wales, and the paler parts of the elytra occupy a greater area, but some specimens are quite as large as southern ones, many of which also have the pale portions quite as extensive. The darker markings of the elytra vary in individuals from almost black and sharply defined to a slight reddish-castaneous, not much darker than the paler parts, and ill-defined, the shape of the markings being sometimes identical on dark and pale forms. Many specimens from Cairns, North-West Australia, and North Australia, have the elytral markings reduced to a reddish semicircle about the scutellum, the patch of exactly the same shades as the pronotum. They appear to almost connect the species with *L. brunneus*, as identified by Blackburn. The average size of tropical specimens is smaller than that of those from the southern parts of Australia, and the paler markings cover a greater area, but there are examples quite as large and dark from Queensland, as from southern parts. Of six specimens, mounted together, from Derby, three have faint "waterlogged" lines on the elytra (somewhat as on the specimen of *L. alternans* commented upon), on one specimen six on each elytron, on another four on each elytron, on the other four on the right and three on the left elytron. Such lines have a deceptive resemblance to striae, are quite distinct from some directions, and invisible from others. Some rather dark specimens from Lord Howe Island also have faint "waterlogged" lines on the pale parts of the elytra. Some of the pale varieties are very close in appearance to *L. tinctus*. Many specimens are attracted to lights.

Queensland: Brisbane, Cairns, Kuranda, Magnetic Island, Mount Tambourine, Palm Island, Rockhampton; New South Wales: Forest Reefs, Inverell, Mount Victoria, Richmond River, Sydney, Tamworth, Wentworth Falls; Victoria: Alps, Birchip; South Australia: Gawler, Lucindale, Mount Lofty, Mount Remarkable, Murray River, Nnriootpa, Ooldea, Port Lincoln, Second Creek; West Australia: Bumbury, Swan River; North West Australia: Derby, King's Sound, North Australia: Daly River, Groote Eylandt, Roper River; Lord Howe Island.

LITOCHRUS MACULATUS Blackb.

Fig. 105-111.

The distinctive feature of this species, according to Blackburn, is a large, triangular, pale spot, common to the middle of the elytra. The length was given as one line, but was stated to be variable. Those before me (including several specimens marked as eotypes) range in length, 1.8-2.5 mm. The usual colour of the upper surface is of a rather dark picous-brown and slightly or moderately iridescent, varying to a rather dark chestnut. The large median spot appears to be always distinct, and is usually, but not always, sharply outlined, its base is usually cut straight across, but sometimes the dark suture encroaches on it, so that it appears as two spots connected at the suture (to a certain extent resembling *Parasemus doctus* on a small scale); on many specimens it is more or less distinctly connected along the suture with a pale apical portion. The pale parts on many specimens have a lined or seriatly-punctate appearance, in certain lights, but this (except for the sutural stria), is partly or entirely due to "waterlogging", the true punctures being very small. The base of the prothorax is often narrowly pale. A specimen from the Dividing Range, that was standing in the Blackburn collection under this name, is almost uniformly castaneous, the elytral triangle and base of prothorax being scarcely paler than the adjacent parts. A specimen from Hobart has the markings faint but readily traceable; and owing to "waterlogging" appears to have quite distinct rows of punctures.

Queensland: Cairns; New South Wales: Armidale, Forest Reefs, Tamworth, Wentworth Falls; Victoria: Alps, Benalla, Dividing Range; Tasmania: Devonport, Hobart, Huon River, Launceston; South Australia: Ardrossau, Lucindale, Mount Lofty, Port Lincoln, Timby; West Australia: Albany, Mount Barker, Swan River.

LITOCHRUS PLAGIATUS Blackb.

Fig. 112-114.

A large species, considered by Blackburn to be distinct from *L. maculatus* by its larger size, larger eighth joint of antennae and club, and "in the shape of the common red spot on its elytra (the front margin of which is triangularly concave, while in *maculatus* it is triangularly convex)." The markings, however, of *maculatus*, although often cut straight across or convex on the basal side, are fairly commonly concave there: I have seen, however, no specimen of *maculatus* as large as any of the eight specimens of *plagiatus* under examination, which range in length 3-4 mm.

Queensland: Brisbane, Cairns; New South Wales: Forest Reefs, Tamworth, Sydney; Victoria: Alps; South Australia: Mount Lofty.

LITOCIRUS LAUTUS Blackb.

Fig. 115-121.

Of the six specimens of this species referred to by Blackburn, five are now before me, and their markings are fairly close in appearance; but with a longer range it is seen that the median marking enlarges considerably, and the other parts may also be enlarged, although in enlarging they often lose in definition; on other specimens the markings decrease in size, and some of the smaller ones are unsatisfactorily close in appearance to *L. maculatus*. Of the three specimens from Sydney, mounted on the same card, one has markings much as on a Tamworth cotype, the others much as on specimens of *L. plagiatus*, and I think it quite possible that *maculatus* (1891, p. 96), *plagiatus* (1902, p. 289), and *lautus* (1902, p. 290), are really all forms of one species; the slight apparent differences in the striae and series of punctures on the elytra, and the comparative sizes of the eighth-eleventh joints of antennae (sometimes sexual) are not to be relied upon. Two specimens from near Sydney are almost black, with the elytral markings deep red (scarcely visible to the naked eye) although of normal shape.

Queensland: Cairns; New South Wales: Galston, Hastings River, Illawarra, National Park, Tamworth, Sydney; South Australia: Barton, Lucindale, Mount Lofty, Murray River.

LITOCIRUS MAJOR Blackb.

L. sparsus Blackb., var.

A large species, 3.5-4.0 mm., with the elytral punctures, for the family, unusually well defined; the obscurely paler margins of the elytra are sometimes distinct throughout, sometimes about the apex only. The intensity of infuscation of the prothorax (the margins appear to be always pale) also varies. I cannot regard *L. sparsus* as more than a dark variety of the species; a cotype agrees perfectly in structure with several specimens of *major*, and differs only in having the prothorax darker, with the paler margins more obscure; on the elytra the sides and tips are scarcely if at all paler than the disc. Thirteen specimens quite evenly grade into each other. The differences mentioned by Blackburn are partly sexual and partly due to the angle of observation; the punctures on the elytral interstices vary somewhat in size and density, but the differences are individual rather than specific.

New South Wales: Blue Mountains; Victoria: Benalla, Dividing Range,

Melbourne; Tasmania: Brighton; South Australia: Adelaide, Balhannah, Kangaroo Island.

LITOCIRUS OBSCURICOLLIS Blackb.

As commented upon by Blackburn this species is "extremely like *Parasemus victoriensis*" in miniature. The elytra are uniformly of a bright castaneous or reddish-castaneous, the "disco postico umbris indeterminatis nigro-piceis," of the original description, being due to their wings showing through, owing to their attachment to the elytra of an occasional specimen that has been in spirits. On some specimens, owing to "waterlogging," faint lines are visible on the elytra, the lines being usually towards the base; but on one specimen there is a distinctly striated appearance, where the dark wings cause the surface to appear infuscated. One specimen, otherwise normal, has a fairly large discal reddish spot on the pronotum. The average size of Tasmanian examples is slightly larger than those from New South Wales.

New South Wales: Clifton, Sydney, Upper Williams River; Tasmania: Cradle Mountain, Frankford, Hobart, Huon River, Launceston, Waratah, Sheffield, Scottdale, Swansea, Ulverstone.

LITOCIRUS SYDNEYENSIS Blackb.

The sutural stria on each elytron of this species is distinct on the apical two-thirds, and in some lights may be faintly traced to the base; on the apical half of the elytra very faint striation may be traced in certain lights, but from most directions the entire elytra, except near the suture, appear to be impunctate. The type was described as piceous-black, and this is the colour of a cotype and many other specimens; but many have the elytra obscurely diluted with red, except that the suture is generally darker; on several only the apical fourth is obscurely diluted.

New South Wales: Galston, Mount Victoria, Sydney; West Australia: Bridgetown, Darling Ranges, Mount Barker, Swan River.

LITOCIRUS PERPARVUS Blackb.

Described as "niger, pronoto picescete" "and 'its under surface of dark colour.'" The type was from Victoria; there were no specimens from Victoria in the Blackburn collection, when it was acquired by the South Australian Museum, but two Tasmanian ones bear a label as *perparvus*. Numerous Tasmanian specimens that appear to belong to the species have the under surface dark, distinctly darker than the legs, but not black. Some New South Wales ones also have the under surface much darker than the legs (which are almost flavous), but hardly

more than a moderately dark brown; their average size is slightly smaller than Tasmanian ones. A specimen from South Australia closely resembles the New South Wales ones. In general appearance they are close to *L. sydneyensis*, but the seriate punctures of the elytra are much more distinct, fairly strong for the genus.

New South Wales: Mount Koseiushko, Richmond River, Sydney, Upper Williams River, Wentworth Falls; Victoria: Dividing Range; Tasmania: Beaconsfield, Hobart, Huon River, Kelso, Swansea, Ulverstone; South Australia: Karoonda to Peebinga.

LITOCURUS MARITIMUS Blackb.

Although on each elytron of a cotype of this species only two striae near the suture are at all well defined, other faint ones may be seen in certain lights towards the apex. The under surface is usually dark brown, but occasionally is no darker than the legs.

Queensland: Bribie Island, Cairns; New South Wales: Sydney; Victoria: Glenelg River; South Australia: Kangaroo Island, Mount Gambier, Mount Lofty.

LITOCURUS FRIGIDUS Blackb.

There were two specimens standing in the Blackburn collection under this name, and one was labelled as a cotype (although in the original description the species was described from "a single example embedded in snow on one of the higher mountains"); the quasi-cotype is without antennae, the other, from the Victorian Alps, agrees well with the description. A single specimen of the species was taken by myself at Frankford (Tasmania). The species may be distinguished from many others very similar in appearance by its black club.

PARASEMUS FULGIDUS sp. nov.

Fig. 33.

Metallic blue, elytra purple and brightly iridescent, parts of under surface blackish, abdomen and legs obscure reddish-brown, labrum, antennae (club black), and palpi reddish-flavous.

Head with minute but fairly sharply-defined punctures, becoming still more minute on prothorax. Each elytron with sutural stria well defined to about basal third and vaguely traceable to base, elsewhere with feeble series of minute punctures, more distinct about sides and apex (where they are irregular) than middle, but nowhere sharply defined. Length, 3.2-3.4 mm.

Queensland: Brisbane (T. McGregor).

A large, brilliant species, at first glance appearing to belong to *Phalacrus*,

but with bispinose hind tibiae and comparatively small scutellum. The under surface is somewhat variable in colour, the sterna is sometimes entirely black, but on one specimen the process between the middle legs is distinctly reddish; the tibiae are somewhat darker than the femora and tarsi. The second joint of the hind tarsi is longer than the first, but a high power is needed to see the proportions clearly.

PARASEMUS MELAS sp. nov.

Fig. 34.

Black, tip of clypeus, labrum, antennae, palpi, under surface, and legs reddish-castaneous.

Head and prothorax with minute punctures. Each elytron with sutural stria distinct to about basal fourth and faintly traceable to base; with regular rows of small but sharply-defined punctures, traceable almost to base, the interstices with numerous smaller punctures. Length, 2.8–3.1 mm.

South Australia (Blackburn's collection), Adelaide (N. B. Tindale), Mount Lofty (S. H. Curnow and J. G. O. Tepper); West Australia: Geraldton (A. M. Lea); Tasmania: Hobart (C. E. Cole and Lea).

In general appearance fairly close to *Litochrus perparvus*, but with the second joint of the hind tarsi slightly longer than the first, as in *Parasemus*. The upper surface is shining, but not at all iridescent, the tips of the elytra are obscurely diluted with red. In some lights the elytra appear to have close-set rows of minute punctures, with rows of larger ones at regular intervals, but the punctures on the interstices are really irregular and become denser posteriorly.

PARASEMUS NOCTIVAGUS sp. nov.

Fig. 35-36.

Black or blackish, front of head, sides of prothorax, and tips of elytra obscurely diluted with red; under surface (the metasternum black or dark brown), legs, antennae, and palpi castaneous.

Head and prothorax with very minute punctures. Each elytron with sutural stria distinct to basal fourth, but not traceable to base; with regular rows of small punctures, also not traceable to base, the interstices with very minute punctures. Length, 2.0–2.2 mm.

Queensland: Cairns, Mount Tambourine (A. M. Lea).

Structurally close to *P. obsoletus*, but darker, less convex, and with more distant punctures, which in some lights are fairly distinct on the elytra. Several of the specimens were obtained at lights.

PARASEMUS AUSTRALIAE SP. NOV.

Fig. 37-39.

Dark castaneous-brown, scutellum and suture obscurely darker, under surface, antennae, palpi, and legs paler.

Head and prothorax with scarcely visible punctures. Each elytron with sutural stria distinct to basal fourth, but not to base itself; with rows of minute

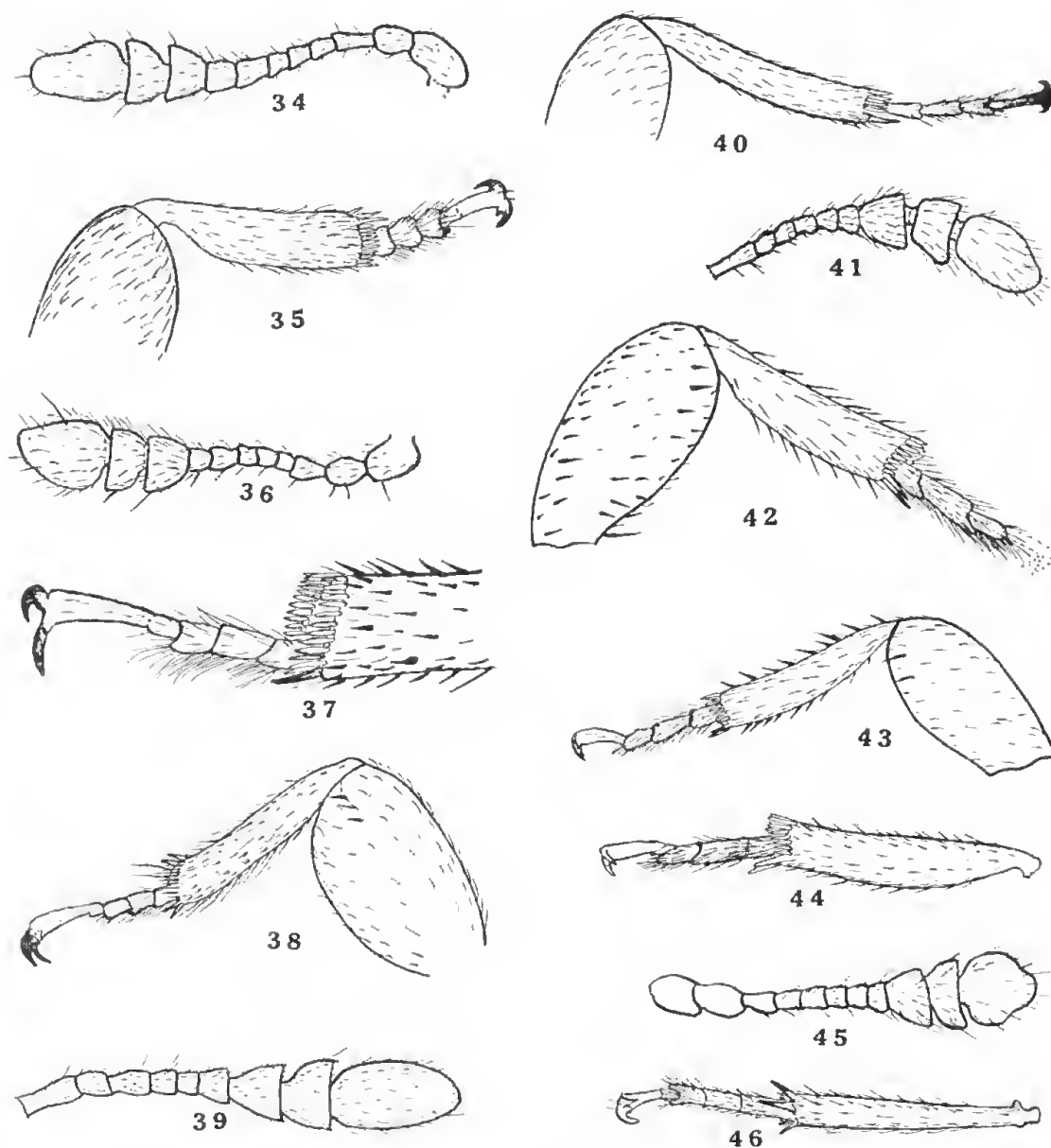


Fig. 34-46. 34, *Parasemus nclus* Lea, antenna. 35, *P. noctivagus* Lea, hind leg. 36, ditto, antenna. 37, *P. australiae* Lea, hind leg. 38, ditto, front leg. 39, ditto, antenna. 40, *P. lasmaniae* Lea, hind leg. 41, ditto, antenna. 42, *P. pallidicornis* Lea, hind leg. 43, *P. apicipennis* Lea, hind leg. 44, *P. terracreginae* Lea, hind leg. 45, *P. haploderus* Lea, antenna. 46, ditto, hind leg.

punctures, fairly distinct in some lights, but not traceable to base; the interstices scarcely visibly punctate. Length, 2·2–2·8. mm.

Queensland: Bluff, Cairns; New South Wales: Sydney (A. M. Lea), Bogan River (J. Armstrong); Tasmania: Hobart, Huon River, Ulverstone; South Australia: Kangaroo Island, Morgan, Tareoola (type); West Australia: Bridgetown, Geraldton, Swan River (Lea).

A rather wide, oblong-elliptic, and not very convex species; its outlines, although not very different from other species, are sufficiently distinctive to render specimens easily recognizable when placed side by side. Some of the mainland specimens are paler than others, being almost of a bright castaneous; the Tasmanian are mostly larger than the others, and have slightly more distinct punctures, their upper-surface is usually black or blackish, but usually the suture is darker than the adjacent surface.

PARASEMUS TASMANIAE sp. nov.

Fig. 40-41.

Black or blackish-piceous, under surface piceous-brown or castaneous-brown, legs, antennae (club infuscated), and tarsi testaceo-flavous.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria distinct to basal fourth, but not traceable to base, and with a shorter second stria; elsewhere with series of minute punctures, more distinct on apical slope than elsewhere. Length, 1·6–1·8 mm.

Tasmania (J. E. Philp), Zeehan (Aug. Simson), Bruni Island, Hobart, Huon River, King Island, Mole Creek, Mount Wellington (including summit), New Norfolk (A. M. Lea).

An oblong-elliptic species, with the upper-surface black, but not a deep black, and with the apical slope of elytra usually obscurely diluted with brown, the front of the head is also narrowly pale. In certain lights the two fine striae on each side of the suture are fairly distinct, the series of punctures are very fine, and the interstices appear to be impunctate. A specimen evidently belonging to this species, from the Simson collection, bears a note by Blackburn, "Seems to be very small dark *Litochrus frigidus* Blackb."; its legs and antennae, however, are entirely concealed; on specimens with antennae clearly visible the club is seen to be infuscated but not black, and the tarsi are certainly not those of a *Litochrus*.

PARASEMUS PALLIDICORNIS sp. nov.

Fig. 42.

Deep shining black, under surface castaneous-brown, antennae, palpi, and tarsi paler.

Head and prothorax scarcely visibly punctate. Each elytron with sutural striae almost to base, and with a shorter adjacent one; with rows of minute punctures. Length, 1.5 mm.

North Australia: Roper River (N. B. Tindale); Queensland: Cairns (F. P. Dodd and A. Koebele).

In general appearance close to the preceding species, but club no darker than the rest of the antennae. In some lights the series of punctures on the elytra, although very small, are quite distinct, they may even be traced about the scutellum.

PARASEMUS APICIPENNIS sp. nov.

Fig. 43.

Blackish, front of head and tips of elytra obscurely diluted with red; under surface dull brown, antennae (club dark), palpi, and legs flavous.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria distinct to basal fourth and faintly traceable to near base; with rows of minute punctures, except about scutellum. Length, 1.3 mm.

North Queensland (Blackburn's collection): Cairns.

A narrow blackish species (narrower than *P. tasmaniae*), with basal joint of hind tarsi distinctly shorter than the second. The specimen from Cairns has the apical half of elytra obscurely brownish.

PARASEMUS TERRAEREGINAE sp. nov.

Fig. 44.

Deep shining black, prothorax, and elytra with very narrow brownish margins, under surface brown or piceous-brown, antennae (club slightly infuscated), palpi, and legs flavous.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria distinct to basal fourth and faintly traceable to base; with rows of very minute punctures, visibly only in certain lights. Length, 1.4 mm.

Queensland: Blackall Ranges (A. M. Lea).

In general appearance close to *P. tasmaniae*, but with only one stria on each elytron near suture. Narrower than the preceding species, and prothorax and elytra with very narrow pale margins.

PARASEMUS HAPLODERUS sp. nov.

Fig. 45-46.

Castaneous, antennae, palpi, and legs paler.

Head and prothorax scarcely visibly punctate. Each elytron with sutural

stria fairly distinct to basal fourth and traceable from there nearly to base, elsewhere with series of scarcely visible punctures. Length, 1.5 mm.

New South Wales: Sydney, Galston (D. Dumbrell and A. M. Lea), Captains Flat, Wentworth Falls (A. Simson); West Australia: Albany (R. Helms), Swan River, Darling Ranges (Lea).

Structurally fairly close to *P. suturellus*, but without the paler suture of that species; consistently paler than *P. tasmaniae*, and with only one stria on each elytron. Most of the specimens, although shining, are of a rather dull castaneous, sometimes piceo-castaneous. The first joint of the hind tarsi is slightly shorter than the second, but it was difficult to see the suture between them clearly, even under a high power, owing to the clothing.

PARASEMUS IRIDIPENNIS sp. nov.

Fig. 47-48.

Black, the elytra with a bluish iridescence, antennae, palpi, and legs reddish-flavous, the femora darker.

Head and prothorax scarcely visibly punctate. Each elytron with a fine sutural stria, traceable almost to base; with rows of minute punctures fairly distinct on apical slope and disappearing before base. Length, 2 mm.

North Queensland (Blackburn's collection), Kuranda (F. P. Dodd).

A deep black, iridescent species, the sides of the prothorax no paler than the middle; although one of the specimens is less iridescent than the others and the apical third of its elytra is obscurely diluted with brown; in certain lights the apical half of the elytra appears to be very finely striated. The basal joint of the hind tarsi is distinctly shorter than the second.

PARASEMUS PALLENS sp. nov.

Fig. 49-50, 122.

Castaneous or flavo-castaneous, antennae and legs slightly paler.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria moderately distinct to basal fourth, but not to base; with rows of minute punctures, fairly distinct in certain lights on apical slope but scarcely visible elsewhere. Length, 1.9-2.1 mm.

New Guinea: Wareo, to light (Rev. L. Wagner); Papua: Mount Lamington, abundant (C. T. McNamara).

Although at first glance the upper surface appears to be of a uniform shade of colour, on close examination the base of the prothorax is usually seen to be narrowly paler. Two specimens are unusually pale, probably from immaturity.

The two basal joints of the hind tarsi are rather short, the first shorter than the second.

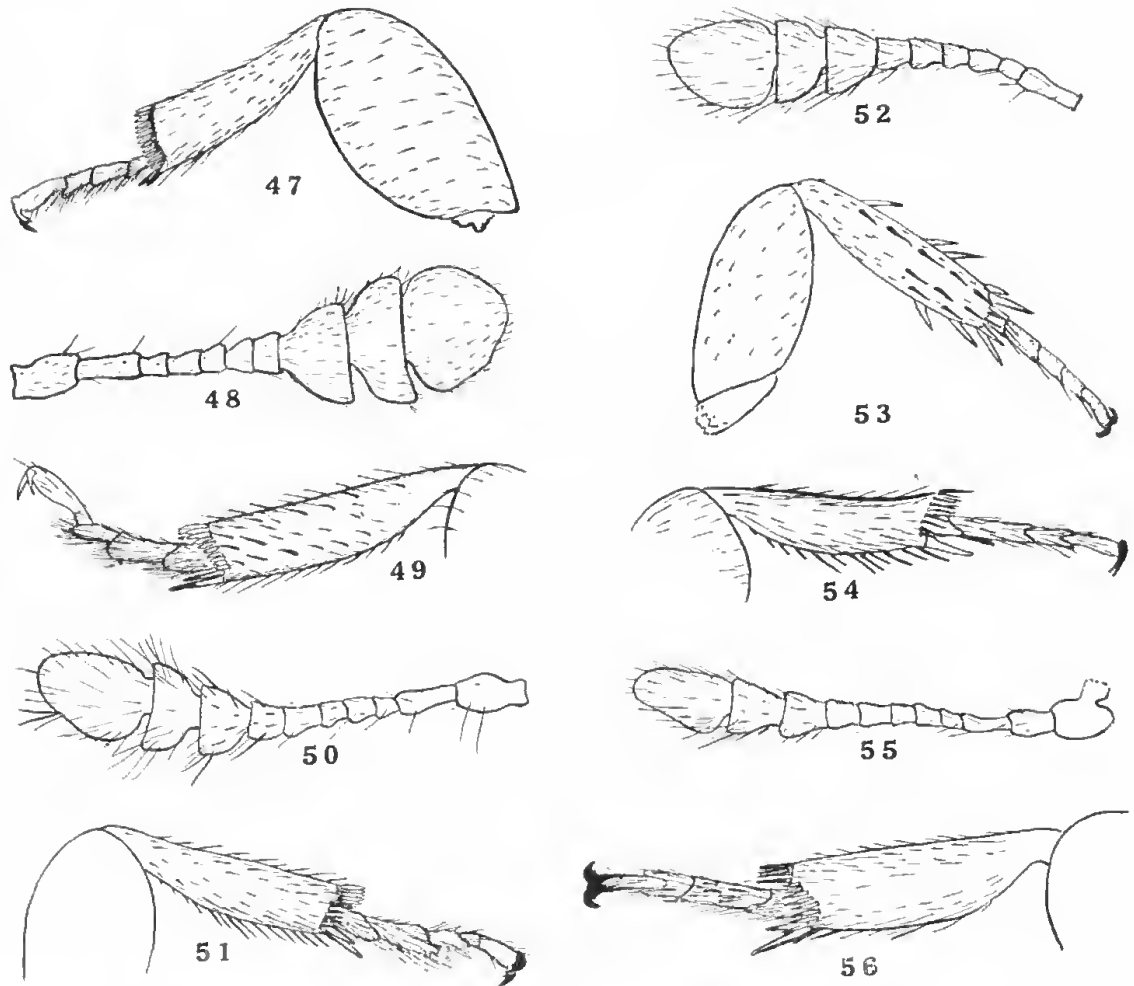


Fig. 47-56. 47, *Parasemus iridipennis* Lea, hind leg. 48, *ditto*, antenna. 49, *P. pallens* Lea, hind leg. 50, *ditto*, antenna. 51, *P. montanus* Lea, hind leg. 52, *ditto*, antenna. 53, *P. parvopallidus* Lea, hind leg. 54, *P. compsus* Lea, hind leg. 55, *ditto*, antenna. 56, *P. moestus* Lea, antenna.

Two specimens differ from the typical form in having an infuscation on each clytron, beginning rather narrowly near each shoulder and extending and dilating obliquely to near the suture at the apical fourth (fig. 122).

PARASEMUS MONTANUS sp. nov.

Fig. 51-52.

Castaneous-brown with a slight bronzy gloss, antennae, palpi, and legs paler. Head with very minute punctures, becoming still smaller on prothorax.

Each elytron with sutural stria distinct to basal fourth and faintly traceable to base itself; with rows of minute punctures, the interstices very minutely punctate. Length, 2 mm.

Papua: Mount Lamington (C. T. McNamara).

In some lights the elytral punctures are fairly distinct on the apical slope, but they are very minute; from a large space about the scutellum they appear to be entirely absent. The basal joint of the hind tarsi is distinctly shorter than the second.

PARASEMUS PARVOPALLIDUS sp. nov.

Fig. 53.

Testaceo-flavous, antennae, palpi, and legs paler.

Head and prothorax scarcely visibly punctate, the former with a large, shallow, interocular depression. Each elytron with sutural stria distinct on apical half and traceable almost to base; with rows of minute but fairly distinct punctures. Length, 1.2 mm.

Queensland: Cairns district, three specimens from fallen leaves (A. M. Lea).

A minute pale species, with more distinct punctures on elytra than on *P. mitchelli*; in addition to the smaller size distinct from *Litochrus tinctus* and *noteroides* by the larger and more distinct punctures on elytra. The first joint of the hind tarsi is shorter than the second, but the sutures of the three basal joints are inconspicuous, except under a high power.

Two specimens from Victoria (Dandenong Ranges, C. French, sen.) agree well with the types, except that the head is without the shallow depression.

PARASEMUS COMPSUS sp. nov.

Fig. 54-55.

Bright castaneous, base of prothorax and suture very narrowly blackish, antennae, palpi, and legs, and sometimes the abdomen, flavous.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria distinct to basal fourth, and traceable almost to base; with rows of fairly distinct punctures, the interstices with minute punctures. Length, 2.5 mm.

West Australia: Beverley (type), Swan River (A. M. Lea), Geraldton (J. Clark); South Australia: Minnipa (H. A. Johnson); Victoria: Grampians, in October (F. E. Wilson); New South Wales: Mittagong, Clarence River (Lea), Galston (D. Dumbrell); Queensland: Cairns (F. P. Dodd and Blackburn's collection), Bundaberg.

Structurally fairly close to *P. victoriensis*, but head and prothorax no darker

than elytra, and general colour more brightly castaneous; it is consistently larger and brighter than *P. obsoletus*; *P. pallidus* is smaller and narrower. In some lights the series of elytral punctures are well defined, and the punctures between them appear also to be seriate in arrangement, but they become confused about the apex. On several specimens the elytra appear to have two small subapical infuscations, due to the dark wings showing through. Several specimens are slightly iridescent. The first joint of the hind tarsi is shorter than the second, but even under a high power its junction with that joint is not very distinct.

PARASEMUS MOESTUS sp. nov.

Fig. 56-57.

Black, prothorax and suture obscurely diluted with red, under surface dull brown, antennae, palpi, and legs paler.

Head and prothorax very minutely punctate. Each elytron with sutural stria fairly distinct on apical half, but not traceable to base; with rows of minute but rather sharply impressed punctures, but absent from a fairly large scutellar space. Length, 2 mm.

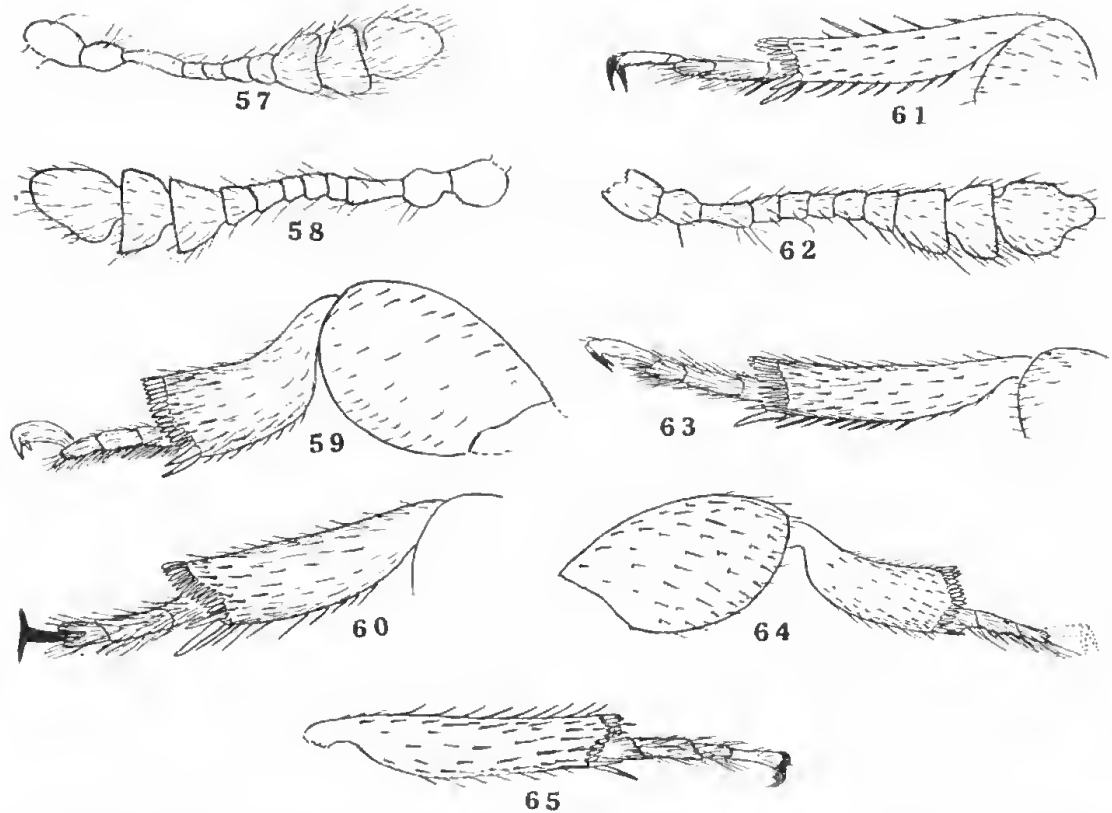


Fig. 57-65. 57, *Parasemus moestus* Lea, hind leg. 58, *P. altus* Lea, antenna. 59, *ditto*, middle leg. 60, *ditto*, hind leg. 61, *P. rufosuturalis* Lea, hind leg. 62, *P. obliquiniger* Lea, antenna. 63, *ditto*, hind leg. 64, *P. bimaculiflavus* Lea, middle leg. 65, *ditto*, hind leg.

Papua: Mount Lamington (C. T. McNamara).

The outlines are much like those of *Litochrus caeruleotinctus*, but the elytra, although shining, are not iridescent, and the hind tarsi are different, the basal joint being distinctly shorter than the second. At first glance the upper surface appears to be entirely black; the metasternum is the darkest part of the under surface. The series of punctures on the elytra, although minute, are fairly distinct in certain lights, the interstices appear to be impunctate, except on the apical slope.

PARASEMUS ALTUS sp. nov.

Fig. 58-60.

Bright castaneous, under surface, antennae, palpi, and legs paler.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria fairly distinct to basal third, but not traceable to base; with rows of minute punctures. Length, 2.0-2.2 mm.

Papua: Mount Lamington (C. T. McNamara).

An unusually convex species; the colour and outlines are much as those of *P. compsus*, but the species is distinctly more convex. The series of elytral punctures, although minute, are fairly distinct in certain lights and rather sharply defined; the interstices are impunctate, except on the apical slope. The basal joint of the hind tarsi is stouter and shorter than the second.

PARASEMUS RUFOSUTURALIS sp. nov.

Fig. 61, 123.

Reddish-castaneous, under surface (the metasternum slightly darker than the other parts), antennae, palpi, and legs paler, each elytron infuscated, except on the sides and on a rather wide sutural space.

Head and prothorax scarcely visibly punctate. Each elytron with sutural stria fairly distinct to basal third and traceable to near base; with series of minute but fairly distinct punctures. Length, 2 mm.

Queensland: Bowen (Ang. Simson).

In general appearance fairly close to *P. discoideus*, but much less convex (this is very distinctly so from the sides), the elytra are slightly longer, and their central mark differs in shape, although variable on both species. The darker parts of the elytra are not sharply defined, and vary with the point of view, but the suture and sides are distinctly paler than the dark parts, and paler than most of the pronotum. In some lights the series of punctures are fairly distinct and the interstices are seen to have punctures, which may also appear to be in series.

although finer than the regular ones, but about the apex they are irregular. The hind tarsi are rather short, with the basal joint shorter than the second.

PARASEMUS OBLIQUINIGER sp. nov.

Fig. 62-63, 124-126.

Dark brown, front of head and sides of prothorax paler, elytra bright reddish-castaneous, an oblique black mark on each; under surface pale reddish-castaneous, antennae, palpi, and legs paler.

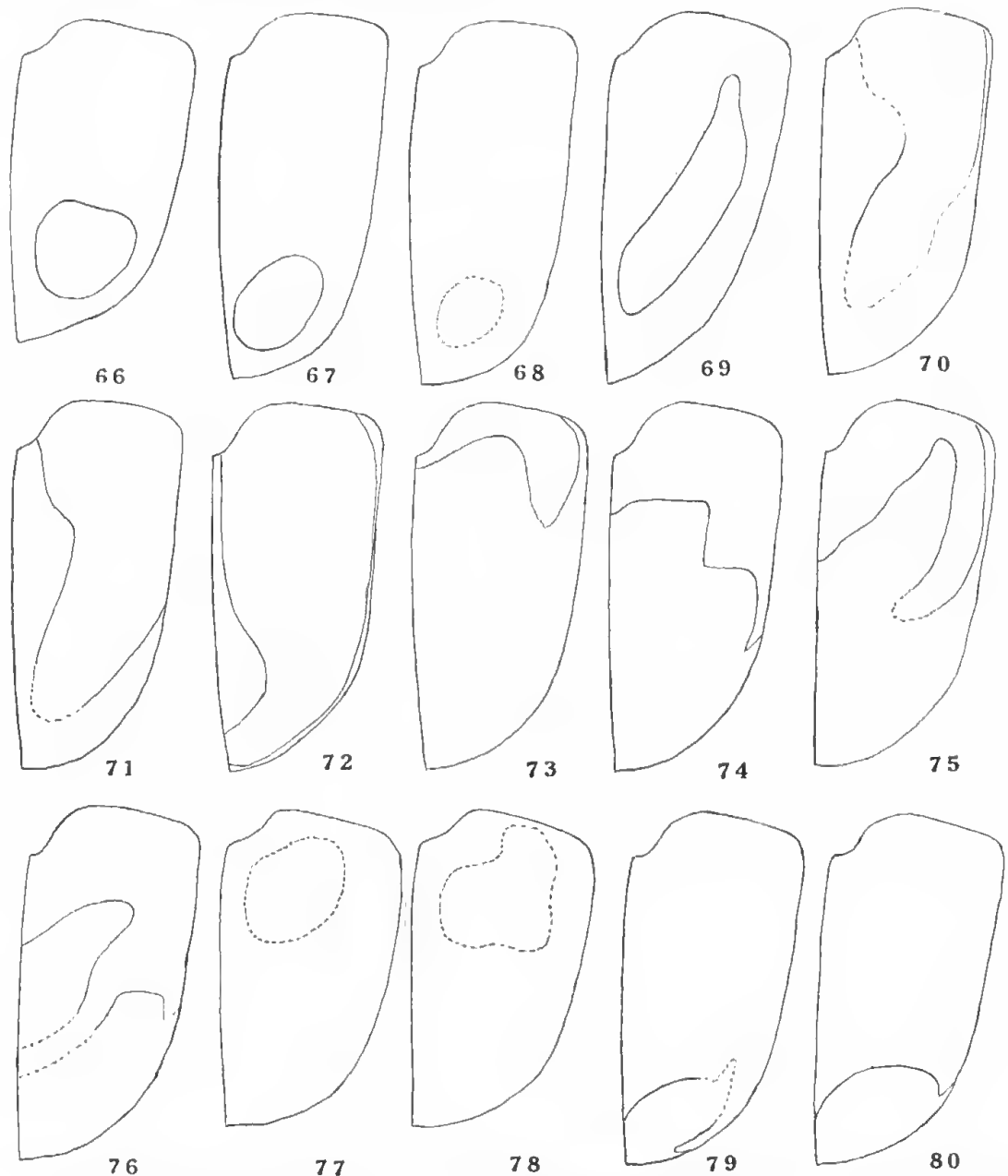


Fig. 66-80. Elytral markings. 66, *Litochrus blackburni* Lea. 67, 68, *L. flavonotatus* Lea. 69, *L. v-niger* Lea. 70, 71, *L. majorinus* Lea. 72, *L. divergens* Lea. 73-76, *L. busipennis* Lea. 77, 78, *L. binotatus* Lea. 79, 80, *L. apiciflavus* Lea.

Head with dense and minute punctures, becoming slightly larger and sparser on prothorax. Elytra with two parallel striae on each side of suture, traceable almost to base; with regular rows of small but distinct punctures, the interstices with punctures as on prothorax. Length, 2.5–3.0 mm.

Victoria: Ararat (type), Bright (H. W. Davey), Dandenong Ranges (C. French, sen.); New South Wales: Sydney (Blackburn's collection), Forest Reefs (A. M. Lea).

The elytra are more pointed than in *P. victoriensis*, and the dark mark on each is always present but the colours are otherwise much the same; the markings are as on some specimens of *P. discoidens*, but the body is larger and the elytra are more pointed. The prothorax is sometimes almost black, and sometimes hardly more than a rather dark reddish-brown; the black or blackish mark on each elytron usually begins some distance behind the shoulders and dilates hindwards to near the suture at the apical third, it is twice as long on some specimens as on others. The prothoracic punctures, although minute, are quite sharply defined in certain lights. The basal joint of the hind tarsi is shorter and stouter than the second.

PARASEMUS BIMACULIFLAVUS sp. nov.

Fig. 64-65, 127.

Deep shining black, sides of prothorax very narrowly reddish, each elytron with a fairly large, rounded, flavous median spot; under surface, antennae, palpi, and legs castaneous.

Head and prothorax with scarcely visible punctures. Each elytron with sutural stria fairly distinct to basal third, and faintly traceable to near base; with series of minute punctures, the interstices with very minute punctures, becoming stronger but more confused about apex. Length, 2 mm.

Queensland: Cairns district (A. M. Lea). Unique.

Very distinct by the bimaculate elytra.

PARASEMUS QUADRIMACULATUS sp. nov.

Fig. 128.

Blackish, sides of prothorax very narrowly paler, each elytron with an oblique flavous spot at the basal third and an irregular apical one, under surface castaneous-brown, antennae, palpi, and legs slightly paler.

Head and prothorax with very minute punctures. Each elytron with sutural stria distinct to basal fourth and traceable almost to base; with regular rows of minute but fairly sharp punctures, the interstices with very minute punctures, becoming confused posteriorly. Length, 2.5 mm.

Papua: Mount Lamington (C. T. McNamara). Unique.

The elytra are slightly iridescent, and the spots are sharply defined but not quite symmetrical. No part of the type was broken off for examination in Canada balsam, but under the microscope the basal joint of the hind tarsi was seen to be shorter than the second.

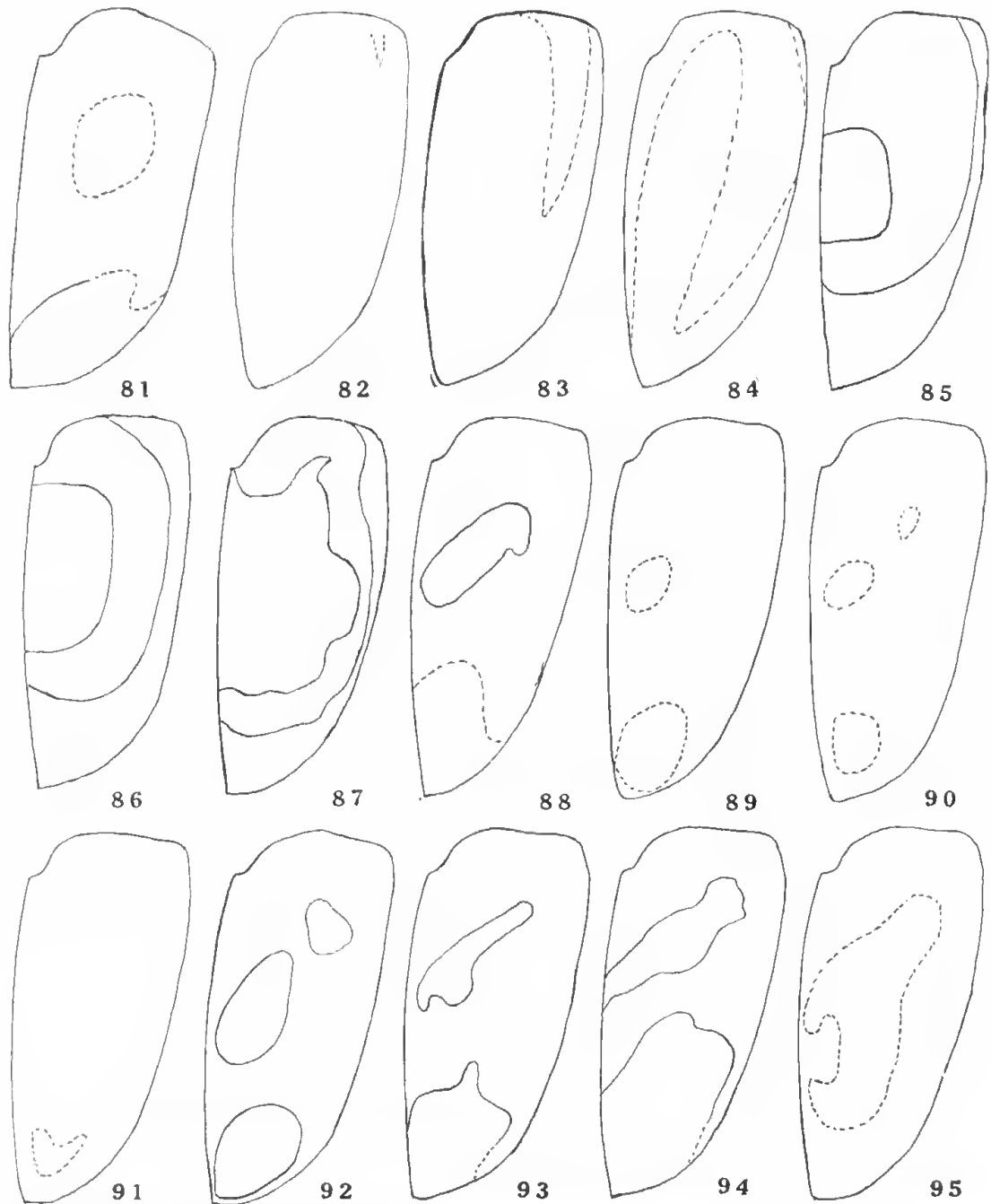


Fig. 81-95. Elytral markings. 81, *Litorchus apiciflavus* Lea. 82-84, *L. brunneus* Er. 85-87, *L. pulchellus* Blackb. 88-95, *L. laticulatus* Blackb.

PARASEMUS PALLIUS Blackb.

A specimen labelled as a cotype of this species has hind legs damaged. In colour and general appearance it agrees well with many of *L. tinctus*, but the two species should be distinct by the proportions of the hind tarsi. On comparing it with the type some years ago it was noted as being somewhat larger and more brightly coloured. Two other specimens, that appear to belong to the species, are from Sydney and Mount Lofty.

PARASEMUS ALPICOLA Blackb. (*Litochrus*).

I noted that the type of this species was a pale, wide, small specimen, in general appearance almost approaching *Phalacrinus*.

PARASEMUS MODESTUS Blackb.

A small pale species, in colour agreeing with many specimens of *L. tinctus*, but more ruddy than most of them, also more compact, more convex, and with stronger punctures on elytra. Seen from the sides the elytra appear to be at their greatest elevation near the scutellum.

PARASEMUS OBSOLETUS Blackb.

Although more convex behind the scutellum than usual in the genus, the apparent convexity depends to a certain extent on the angle of attachment to the prothorax. The colour is usually of a livid-brown ("fusco-piceus" of the description), the prothorax scarcely, if at all, paler on the sides than on the disc.

Queensland: Bribie Island, Bundaberg, Cairns, Hamilton; New South Wales: Clarence River, Sydney.

PARASEMUS MITCHELLI Blackb.

A minute species, with the entire margins obscurely paler than the general surface.

Queensland: Cairns, Darnley Island, Mount Tambourine; New South Wales: Richmond River; New Guinea: Finsch Haven, on *Casuarina*.

PARASEMUS ADUMBRATUS Blackb.

In size and general appearance much like specimens of *Litochrus major*, but wider and with different legs. Several specimens from Cairns are rather bright reddish-castaneous, the prothorax infuscated, with rather wide, pale markings on each elytron, with an obscure infuscation and in parts brightly iridescent. Two others from Kuranda are almost black, with the base very narrowly, and

sides of prothorax and suture of elytra obscurely paler. Blackburn said that the species differed from *P. lateralis* and *victoriensis* "inter alia multa by the form of the clypeus"; this being described as "subelongato antice sat angustato, ad apicem subtruncato." A cotype of the species has the clypeal suture faintly marked at the sides and scarcely traceable elsewhere, the clypeus itself about

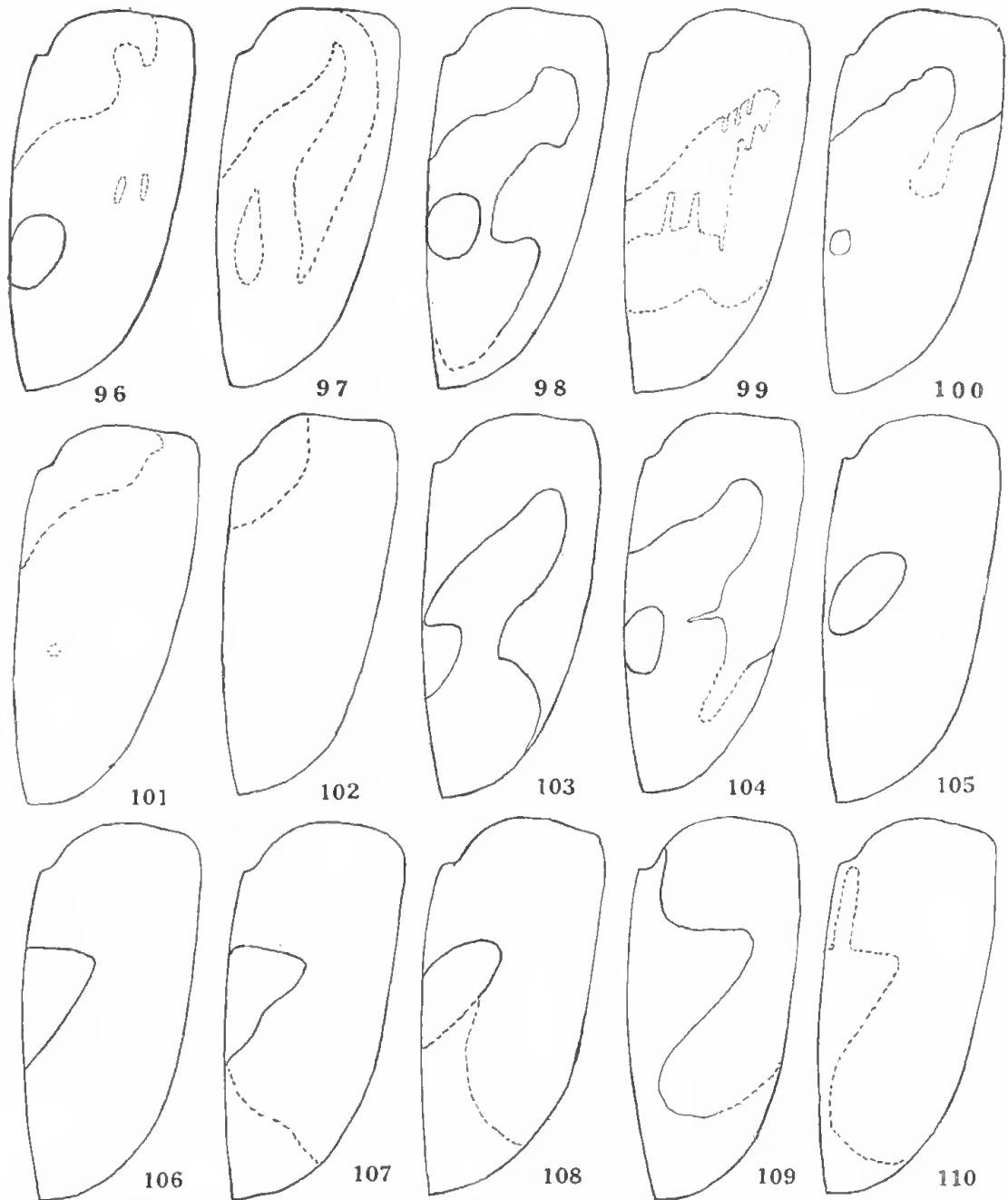


Fig. 96-110. Elytral markings. 96-102, *Lathrochus lacteus* Blackb. 103, 104, *L. lacteus* var. *consors* Blackb. 105-110, *L. maculatus* Blackb.

four times as wide as long; on several specimens its colour is slightly paler than the part behind it; but I cannot regard it as distinctly different from the clypeus of *victoriensis*.

Queensland: Cairns, Kuranda, Mount Tambourine; New South Wales: Galston; Victoria: Dividing Range; South Australia: Mount Lofty.

PARASEMUS VICTORIENSIS Blackb.

The type of this species was described as testaceous-red, the prothorax, except for the sides and base, darker. The species is very common in parts of Eastern Australia, and most of the specimens before me have the elytra of a rather bright and uniform chestnut-red colour, the prothorax conspicuously darker, except at the base and sides; the elytra, however, are sometimes paler; on some specimens the upper surface is uniformly pale.

Queensland: Cairns, Goodna, Mount Tambourine; New South Wales: Dorrigo, Galston, Forest Reefs, Jenolan, Queanbeyan, Sydney, Tamworth, Wentworth Falls, Werris Creek; Victoria: Alps, Dividing Range; South Australia: Lucindale.

PARASEMUS SUTURELLUS Blackb.

Referred originally to *Litochrus*, but transferred in 1895 to *Parasemus*, and tabulated with the species of that genus, but the colour not mentioned, except in the original description, where it was noted as piceous or reddish-piceous, with the prothoracic and elytral margins, including the suture, testaceous. The colour varies from almost black, with the base of prothorax and suture and sides of elytra conspicuously paler, almost flavous, to a rather dingy reddish-brown, with the paler parts hardly indicated. On brightly coloured specimens the pale markings form a conspicuous narrow T. On some large dark and small dark specimens from West Australia the only parts of the base of prothorax that are pale are the external margins; their elytra are entirely dark, except that parts of the external margins are very narrowly pale. There are similar specimens from South Australia, New South Wales, Tasmania, and Queensland, as well as the typical forms, and they have the elytral punctures quite as strong. A specimen, from Cairns, has the elytra black, with a bright bluish iridescence, the outer margins are very narrowly pale, but not the suture; the base of the prothorax is very narrowly pale, the sides more widely so. Some of the very pale specimens are coloured much as *L. lineatus*, but they are less oval in shape, and even on the palest specimens the base of the prothorax is still paler. The length ranges 1.8–2.2 mm.

Queensland: Cairns, Mount Tambourine; New South Wales: Como, Dorrigo,

Forest Reefs, Sydney; Tasmania: Beaconsfield, Bridport, Hobart, Kelso, Launceston, Mount Wellington, Southport, Waratah; South Australia: Barton, Gawler, Kangaroo Island, Karoonda to Peebinga, Lucindale, Mount Lofty, Murray River, Ooldea, Port Lincoln; West Australia: Albany, Beverley, Bun-

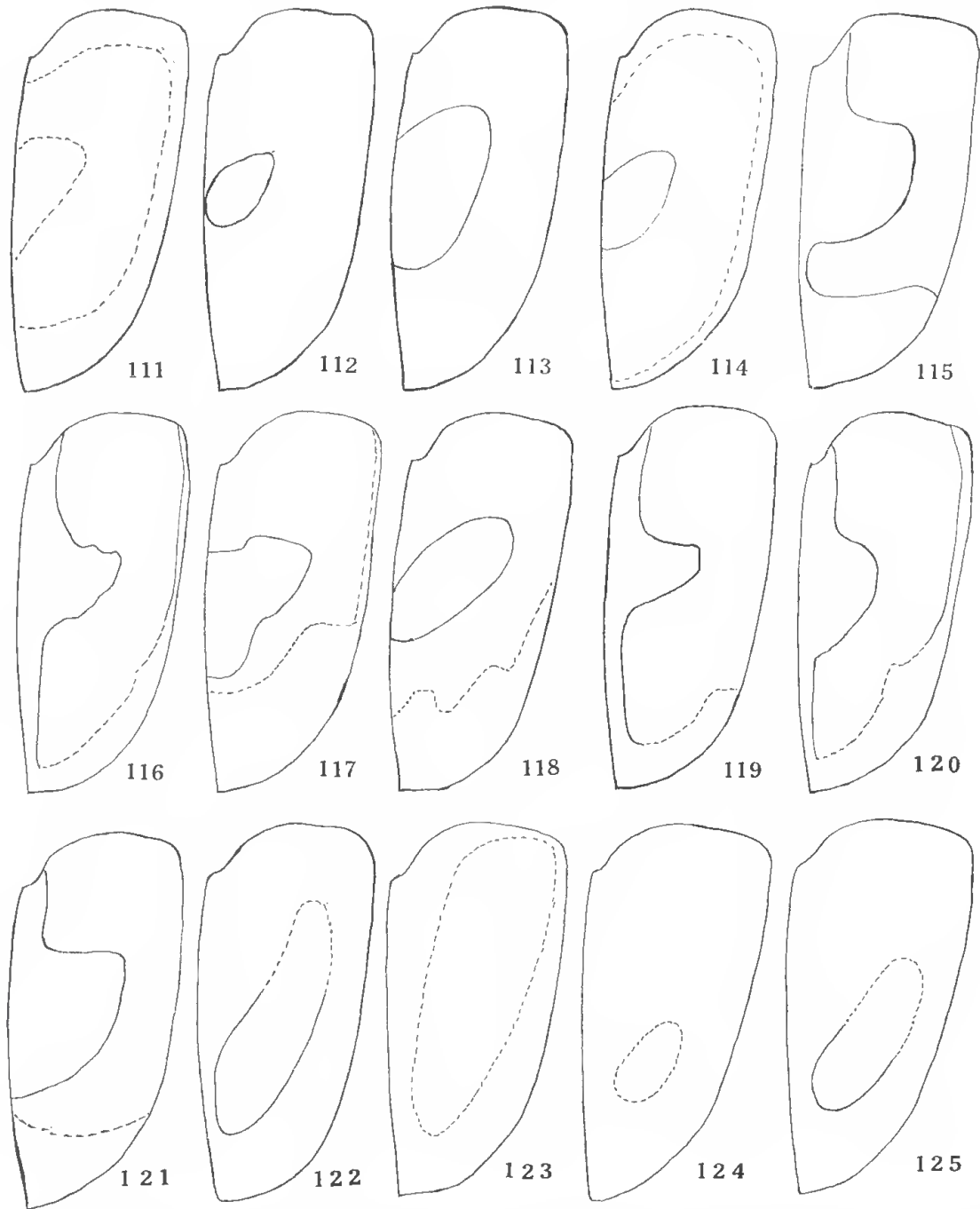


Fig. 111-125. Elytral markings. 111, *Litochrus maculatus* Blackb. 112-114, *L. plagiatus* Blackb. 115-121, *L. lautus* Blackb. 122, *Parasemus pallens* Lea, var. 123, *P. rufosuturalis* Lea. 124, 125, *P. obliquiniger* Lea.

bury, Garden Island, Geraldton, Mount Barker, Rottneſt Island, Swan River, Vasse.

PARASEMUS DISCOIDEUS Blackb.

Fig. 129-133.

Twelve ſpecimens, including two cotypes, of this ſpecies before me are all from the Cairns diſtrict; they vary ſomewhat in the extent and intensity of the infuſcations of the elytra. The hind angles of the prothorax are more produced over the ſhoulders than is uſual in the family. On one ſpecimen the whole of the upper ſurface, to the naked eye, appears to be uniformly black, but on cloſe examination the ſides of the prothorax and a large diſcal area of the elytra are ſeen to be obſcurely paler; on another ſpecimen only a comparatively ſmall humeral area is rather lightly infuſcated.

PARASEMUS TORRIDUS Blackb.

Fig. 134-139.

This ſpecies was deſcribed as being "ſupra piccus plus minusve rufescens," and in the table was placed with thoſe having "elytra without ſharply-defined markings." There are four of the original ſpecimens before me, three bearing the number 5945 and two with cotype labels; each of the latter is of a dark red, each elytron with a blackiſh area occupying moſt of the ſurface, on one ſpecimen (leſs on the other) with the ſuture and ſides of the ſame ſhades of red as the prothorax; the third ſpecimen has the elytra entirely dark and brightly irideſcent (much as on many ſpecimens of *P. alternans*, except that they are wider in proportion); the fourth ſpecimen is ſmaller than the others and entirely pale reddiſh-brown, approaching in colour ſome of the darker ones of *L. lineatus*. There are many other ſpecimens under examination, ſome of which have well-defined markings, although the reddiſh ſuture and ſides of the elytra are ſometimes almoſt as dark as the diſc; the prothorax alſo is ſometimes almoſt black, the ſides, or ſides and baſe, narrowly excepted or not. The ſtria cloſe to the ſuture, really terminates ſome diſtance from the baſe, as may be quite diſtinctly ſeen from the ſides, but when viewed directly from above, on ſome ſpecimens, owing to "waterlogging" it appears to extend to the baſe itſelf. One ſpecimen from Mount Tambourine has the upper ſurface almoſt black, the ſides and baſe of elytra narrowly, and ſides of the ſuture of elytra rather widely, obſcurely reddiſh; a ſmaller one from the ſame mountain is of a bright caſtaneous-red, with a rather vague infuſcation on each elytron occupying about one-third of its ſurface. Seven from the Upper Williams River have the ſuture rather dark red, narrow and parallel on three of them, narrow at the apex and evenly dilated to

the base (but obscure) on two others, and near the base dilated into a subcircular spot on two others; on two others, from Bribie Island and Cairns, there is an almost circular spot on the suture towards the base. The length ranges 2.0–3.3 mm.

Queensland: Bribie Island, Cairns, Mount Tamborine; New South Wales: Dorrigo, Upper Williams River; North West Australia: Derby, Upper Ord River; North Australia: Darwin, Groote Eylandt, Melville Island; Papua: Mount Lamington.

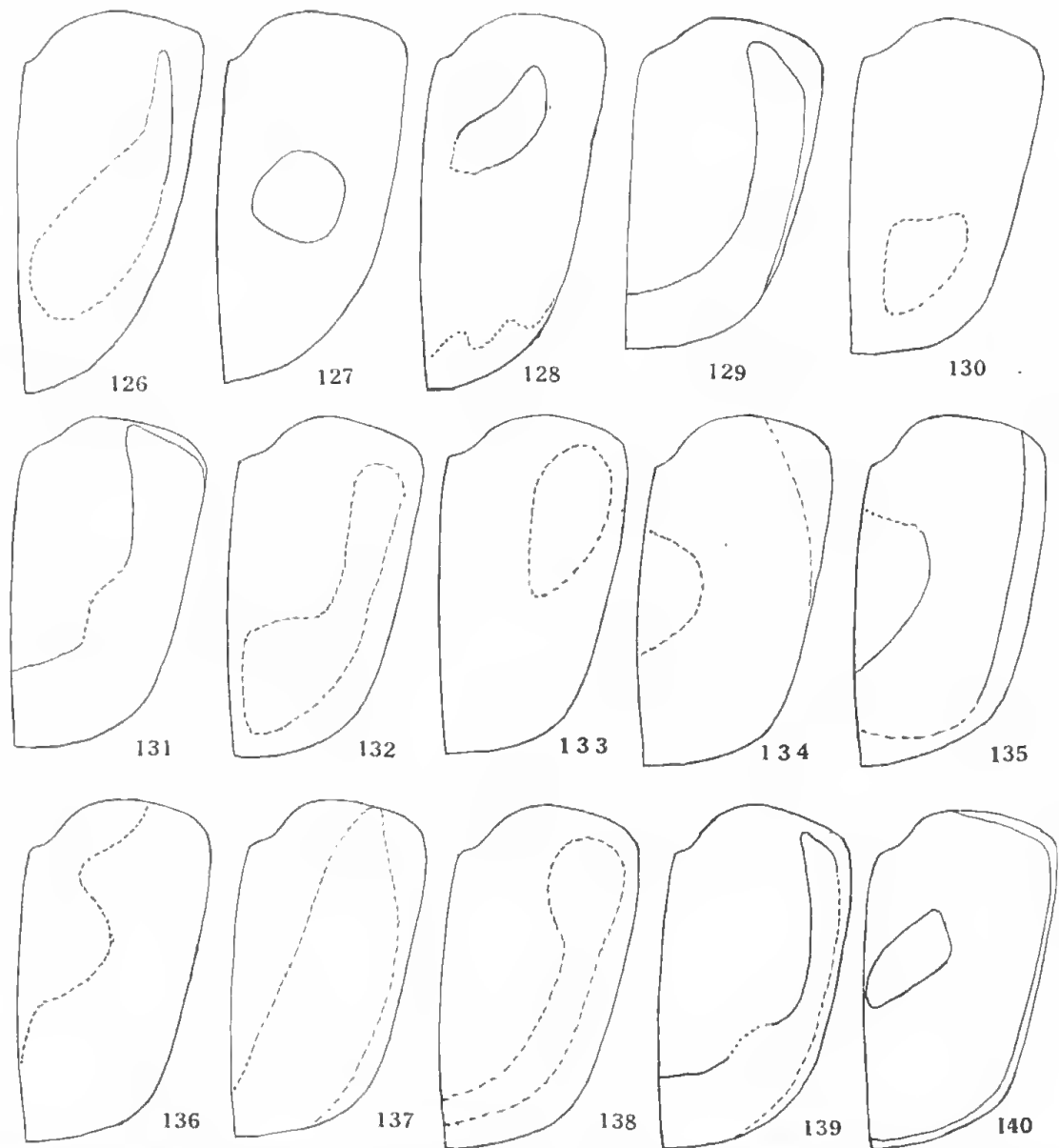


Fig. 126–140. *Parascamus obliquiniger* Lea. 127, *P. bimaculiflavus* Lea. 128, *P. quadrimaculatus* Lea. 129–133, *P. discoidens* Blackb. 134–139, *P. torridus* Blackb. 140, *P. doctus* Blackb.

Of four specimens from Mount Lamington that appear to belong to the species, two have a large space (truncated at the base, rounded elsewhere), occupying most of the median area of the elytra, of a rather dark red; one of them has the prothorax of the same colour, on the other it is dark, except at the sides; the third specimen has an obscurely reddish area not quite as large on the elytra; and the fourth has a somewhat oval, ill-defined, median area and the outer base obscurely reddish.

PARASEMUS DOCTUS Blackb.

Fig. 140.

There were no specimens of this species standing under the name in the Blackburn collection when it was acquired by the South Australian Museum; but one in my own collection, from Como, bears his name label as the species and agrees with the description. In general appearance the species bears a strong resemblance to *Litochrus plagiatus*, and some brightly marked ones of *L. maculatus*, but is distinctly wider. Several from Queensland, New South Wales, and Victoria agree well with the Como one; on three others from Queensland the prothorax is castaneous, and elytra mostly castaneous, with the markings in the same positions but much less contrasted.

Queensland: Cairns, Mount Tambourine; New South Wales: Blue Mountains, Como, Sydney; Victoria: Lakes Entrance.